POLAR CONTINENTAL SHELF PROJECT

NEWSLETTER
1992

Canada

(version française disponible)

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1992

Energy, Mines and Resources Canada
Énergie, Mines et Ressources Canada

Canada

THE ENERGY OF OUR RESOURCES

THE POWER OF OUR IDEAS

93-00799/

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ANTHROPOLOGY

Mackenzie Delta Heritage Project **Project:** 292-91

Period: 15-22 June

Area: Tuktoyaktuk, Kidluit Bay, Reindeer Station

Name: Arnold, Charles, Dr.

Prince of Wales Northern
Heritage Centre
Government of the NWT
P.O. Box 1320
Yellowknife, Northwest Territories
X1A 2L9

Tel: (403) 920-8839
Fax: (403) 873-0129

During the 1920s, the Canadian government initiated the development of reindeer husbandry as an economic venture for the Inuit. Over the years much has been written about its implementation in the Mackenzie Delta area and the continuing struggle to make it a viable resource. A critical component missing from understanding this endeavour are the perspectives of the Inuit involved in the early days of the industry (1930 - 1960s) - the first herders and herd owners who achieved little or no economic success. The proposed project involves documenting this important aspect of Inuvialuit history through interviews with elders from Tuktoyaktuk and Inuvik.

Arctic Science Ethnography **Project:** 253-91

Period: 19 June - 18 July

Area: Lancaster Sound, Lake Hazen

Name: Bielawski, E., Dr.

Arctic Insitute of North America
RR # 4, 10971 Cedar Lane
Sidney, British Columbia
V8L 4R4

Tel: (604) 656-5999
Fax: (604) 727-3329

This research is an ethnography of northern science: an attempt to describe and interpret the behaviours, beliefs and attitudes expressed in northern science. This is one step in comparing northern science with the knowledge of Inuit and Dene people of the North. The supporting and constraining factors that affect northern science are examined. This research will yield policy recommendations for northern science that better serve both the North and the interests of Canada.

Archaeological Survey: East Coast of Smith Sound-Greenland

Project: 29-92

Period: 20 June - 18 July

Area: Qaanaaq, Greenland

Name: Schledermann, Peter, Dr.

Arctic Institute of
North America
University of Calgary
11th Floor, Library Tower
2500 University Drive N.W.
Calgary, Alberta T2N 1N4

Tel: (403) 220-4008
Fax: (403) 282-4609

The principal investigators have been invited by the National Museum of Greenland to participate in an archaeological survey along the east coast of Smith Sound between the settlements of Qaanaaq and Etah. Canadian participants will be able to compare the results of their findings from work along the central east coast of Ellesmere Island with new evidence from the Greenland side of this important cultural region. In turn, they will provide the Qaanaaq team with substantial knowledge of prehistoric developments in the High Arctic based on the Ellesmere Island work.

Herschel Island Cultural Study and Yukon North Slope Cultural Resources Survey

Project: 294-91

Period: 18-26 July

Area: Tuktoyaktuk

Name: Nagy, Murielle, Dr.

Inuvialuit Social Development
Program
P. O. Box 2000
Inuvik, Northwest Territories
X0E 0T0

Tel: (403) 492-2233
Fax: (403) 979-2135

The goal of the study is to document post-contact aboriginal land use at Herschel Island and along the Yukon North Slope. 1992-93 will be the final phase of the project during which the oral history collected will be summarized and presented in a thematic format. Elders previously interviewed will be revisited so that the information gathered can be cross-checked.

ARCHAEOLOGY

NOGAP Archaeology Project **Project:** 283-91

Period: 15 June - 20 August

Area: Tuktoyaktuk

Name: Morrison, David

Canadian Museum of Civilisation
P.O. Box 3100, Station B,
100 Laurier Street
Hull, Quebec
J8X 4H2

Tel: (819) 997-8194
Fax: (819) 953-9382

The NOGAP Archaeology Project is a multi-year research programme established to increase and upgrade the scientific knowledge of the archaeological and cultural resources of the Mackenzie Delta - Beaufort Sea region, with the aim of mitigating future hydrocarbon development. Work planned includes comparatively small-scale excavations at five or six sites in the Tuktoyaktuk Peninsula-Eskimo Lakes area, and several more excavations in the area southeast of Inuvik.

Inuit-European Contact:
Archaeology of Frobisher Bay **Project:** 290-91

Period: 15 June - 5 September

Area: Cape Haven, Kuyait, Sumner Island, Kamaiyuk

Name: Gullason, Lynda

Department of Anthropology
McGill University
718 Leacock Building
Montreal, Quebec
H3A 2T7

Tel: (514) 398-4302
Fax: (514) 398-7476

To study the impact of historic European Arctic activities (primarily that of the Frobisher voyages of 1576-1578) on the development of East Baffin Island Thule Inuit through the archaeological investigation of contact period Thule sites.

Mount Oliver Thule Archaeology Project **Project:** 291-91

Period: 18 June - 18 August

Area: Mount Oliver, Hazard Inlet

Name: Whitridge, Peter James

Department of Anthropology
Arizona State University
Tempe, Arizona
85284-2402 USA

Tel: (602) 965-6213
Fax: (602) 965-2012

This multi-year project will involve survey and excavation of the Thule winter village at Mount Oliver, with the particular object of investigating Thule social organization through an assessment of variability in artifact and faunal assemblages between households and between gender-specific activity areas.

Archaeological Survey: East Coast of Smith Sound-Greenland **Project:** 29-92

Period: 20 June - 18 July

Area: Qaanaaq, Greenland

Name: Schledermann, Peter, Dr.

Arctic Institute of
North America
University of Calgary
11th Floor, Library Tower
2500 University Drive N.W.
Calgary, Alberta
T2N 1N4

Tel: (403) 220-4008
Fax: (403) 282-4609

The principal investigators have been invited by the National Museum of Greenland to participate in an archaeological survey along the east coast of Smith Sound between the settlements of Qaanaaq and Etah. Canadian participants will be able to compare the results of their findings from work along the central east coast of Ellesmere Island with new evidence from the Greenland side of this important cultural region. In turn, they will provide the Qaanaaq team with substantial knowledge of prehistoric developments in the High Arctic based on the Ellesmere Island work.

Hazard Inlet Thule Eskimo Whaling Project **Project:** 132-80

Period: 21 June - 22 August

Area: Hazard Inlet, Creswell Bay, Elwin Bay

Name: Savelle, James M., Dr.

Department of Anthropology
McGill University
855 Sherbrooke Street West
Montreal, Quebec
H3A 2T7

Tel: (514) 398-4292
Fax: (514) 398-7476

The project focuses on the investigation of prehistoric Thule Eskimo (ca. A.D. 1000-1600) bowhead whale-based subsistence-settlement systems at Hazard Inlet, southeastern Somerset Island. The 1992 field research will include the excavation of a number of sites representing permanent winter occupations and "seasonal" summer and fall whaling camps, and of whale processing and caching sites. In addition, ancillary investigations on Somerset Island in conjunction with Dr. Tom Smith (Department of Fisheries and Oceans) will involve the examination of an early historic whaling site at Elwin Bay, and the observation and recording of modern Inuit whaling practices at Creswell Bay.

Wager Bay Park Proposal - Canadian Parks Service **Project:** 170-92

Period: 25 June - 30 July

Area: Wager Bay Area

Name: Seale, Elizabeth

Canadian Parks Service
Environment Canada
Box 1166
Yellowknife, Northwest Territories
X1A 2N8

Tel: (403) 873-8477
Fax: (403) 873-8185

Research towards development of a national park proposal; this research includes the continuation of an archaeological survey begun in 1991 and the examination of visitor activity potential, important geological themes and park management issues.

McDougall Sound Archaeology Project **Project:** 223-89

Period: 1 July - 12 August

Area: Southeast Shore of Little Cornwallis Island

Name: Helmer, James, Dr.

Department of Archaeology
University of Calgary
Calgary, Alberta
T2N 1N4

Tel: (403) 220-7543
Fax: (403) 282-9567

The McDougall Sound project will involve the detailed archaeological examination of three late Dorset village sites located in proximity on the S.E. shore of Little Cornwallis Island, N.W.T.

Prehistoric Adaptations to Changing Environments in West Ellesmere Island **Project:** 256-91

Period: 3 July - 12 August

Area: Fosheim Peninsula Area - Iceberg Point, Ooblayah Bay

Name: Sutherland, Patricia, Dr.

Canadian Museum of Civilization
P.O. Box 3100, Station B
100 Laurier Street
Hull, Quebec
J8X 4H2

Tel: (819) 997-8173
Fax: (819) 953-9382

This project is a continuation of research into the prehistory of the Eureka Upland. It is planned as the archaeological component of the GSC Global Change Programme on the Fosheim Peninsula. Its goal is to interpret the manner in which various prehistoric occupants of the area adapted to past changes in their local environments, and conversely to provide other disciplines involved in the Global Change Programme with archaeological information contributing to the study of past environments in the area.

Qikiqtaruk Archaeology Project **Project:** 274-90

Period: 8 July - 19 August

Area: Pauline Cove, Herschel Island, Yukon

Name: Friesen, Max T.

Department of Anthropology
McGill University
855 Sherbrooke Street West
Montreal, Quebec
H3A 2T7

Tel: (514) 398-4302
Fax: (514) 398-7476

The Qikiqtaruk Archaeology Project will investigate cultural stability and change in the prehistoric and historic archaeological records on Herschel Island, northern Yukon Territory. Herschel Island contains a detailed record of more than 700 years of Inuvialuit prehistory and history, and served as a focus of Inuvialuit - Euroamerican interaction during the late nineteenth century.

The Amadjuak Lake Project: Archaeology of Terrestrial Hunting Systems **Project:** 244-91

Period: 10 July - 10 August

Area: Amadjuak Bay, Baffin Island

Name: Stenton, Douglas R., Dr.

Canadian Circumpolar Institute
University of Alberta
G-213 Biological Sciences Building
Edmonton, Alberta
T6C 2E9

Tel: (819) 979-4051 (Iqaluit)
Fax: (819) 979-0518

The Amadjuak Lake Project combines archaeological, oral historical and biological information as a means of understanding settlement-subsistence behaviour of Arctic hunter-gatherers during the last millennium. The study specifically focuses on summer and autumn settlement patterns, and the material record of these activities found in the interior of south-central Baffin Island, NWT.

Archaeological Investigations in the Pond Inlet Region

Project: 133-78

Period: 15-30 July

Area: Pond Inlet

Name: Mary-Rousselière, Father G.

Catholic Mission
Pond Inlet, Northwest Territories
X0A 0S0

Tel: (819) 899-8833

To continue archaeological investigations in Navy Board Inlet and Eclipse Sound.

Artifact Recovery on Beechey Island

Project: 114-92

Period: 21-31 July

Area: Beechey Island, NWT

Name: Hobson, George D.

P.O. Box 161
Manotick, Ontario
K4M 1A3

Tel: (613) 692-3713

Attempt to recover artifact buried on Beechey Island during the search for Franklin.

Beechey Island Commemorative Plaquing **Project:** 183-92

Period: 25 July - 15 August

Area: Beechey Island

Name: Bertulli, Margaret

Prince of Wales Nothern
Heritage Centre
Government of the NWT
P.O. Box 1320
Yellowknife, Northwest Territories
X1A 2L9

Tel: (403) 920-8084
Fax: (403) 873-0205

Commemorative plaques will be installed at the Franklin encampment and Northumberland House informing visitors of the sites' significance and protected status. A plan for use of the island, including an assessment of the appropriateness of the cairns and monuments already erected, will also be developed.

Kodlunarn Island Archaeology Project **Project:** 194-91

Period: 1-20 August

Area: Kodlunarn Island

Name: McGhee, Robert, Dr.

Canadian Museum of Civilization
P.O. Box 3100, Station B
Hull, Quebec
J8X 4H2

Tel: (819) 776-8187
Fax: (819) 776-8300

In 1577-78, the English expeditions led by Martin Frobisher established their headquarters on Kodlunarn Island in Frobisher Bay. This small island was the centre of their mining activities and the site of the first English colony planned for the New World. The project is designed to assess the archaeological potential of the site, and to complete excavation and stabilization of a small masonry house built by the final Frobisher expedition.

BATHYMETRY

Hydrographic Survey **Project:** 51-73

Period: 16 March - 8 May

Area: Pelly Bay

Name: Medendorp, John

Science
Department of Fisheries and Oceans
P.O. Box 5050
867 Lakeshore Road
Burlington, Ontario
L7R 4A6

Tel: (416) 336-4854
Fax: (416) 336-4819

Collect depth measurements through the ice using helicopters to determine a safe shipping route for sea-lift and fuel supply ships into Pelly Bay. The TIBS (Through Ice Bathymetry System) and spot sounding depths will be positioned using GPS, and will be used to improve navigation charts.

Western Arctic Tidal Program 1992 **Project:** 28-82

Period: 13 July - 3 August

Area: Tuktoyaktuk, Cape Parry

Name: Sargent, E.D.

Canadian Hydrographic Service
Department of Fisheries and Oceans
Institute of Ocean Sciences
P.O. Box 6000
9860 West Saanich Road
Sidney, British Columbia
V8L 4B2

Tel: (604) 363-6343
Fax: (604) 363-6323

To maintain and service tide gauges at Tuktoyaktuk and Cape Parry for the ongoing monitoring of water levels in the Beaufort Sea area.

Western Arctic Hydrographic Surveys **Project:** 86-91

Period: 20 July - 15 September

Area: Tuktoyaktuk and Coppermine

Name: Mortimer, A.

Canadian Hydrographic Service
Department of Fisheries and Oceans
P.O. Box 6000
9860 West Saanich Road
Sidney, British Columbia
V8L 4B2

Tel: (604) 363-6349
Fax: (604) 363-6323

The Canadian Hydrographic Service contracted Terra Surveys in 1990 to sound Dolphin and Union Strait using airborne Lidar bathymetric techniques. CHS intends to send the major survey ship TULLY to ground truth the Lidar data and to complete charting of the area.

BIOLOGY

Environmental Site Assessments and Monitoring **Project:** 216-92

Period: 1 April - 30 May

Area: Rae Point, Kittigazuit Channel

Name: d'Entremont, André

Environmental Protection
Environment Canada
P.O. Box 370
Yellowknife, Northwest Territories
X1A 2L9

Tel: (403) 920-6062
Fax: (403) 873-8185

There will be two components to the study: one a site assessment of Panarctic's scrap metal stockpiles at Rae Point and three other sites to assess disposal options, particularly if disposal at sea would be suitable, the second a short monitoring program and inspection at Kittigazuit channel near Tuktoyaktuk. Samples for the analysis of suspended sediments and heavy metals may be collected.

NOGAP B.6 Beaufort Sea Oceanography **Project:** 285-90

Period: 10 April - 15 May

Area: Tuktoyaktuk Area

Name: MacDonald, R. W.

Institute of Ocean Sciences
Department of Fisheries and Oceans
P. O. Box 6000
Sidney, British Columbia
V8L 4B2

Tel: (604) 363-6409
Fax: (604) 363-6807

The objective is to understand natural hydrocarbon distributions and primary productivity in the hydrocaron-exploration zone of the Mackenzie shelf/estuary. The project team believes the optimal way to predict impact of projected industrial discharges of hydrocarbons, planned or accidental, is to study and model processes governing natural distributions of the same compounds and to measure transport mechanisms which will tend to concentrate or dilute contaminants within the shelf/estuary system or to move them off the shelf.

Polar Bear Ecology and Interrelationships with Arctic Marine Mammals

Project: 7-73

Period: 15 April - 31 May

Area: Northern Beaufort Sea, Radstock Bay, Northern Baffin Bay

Name: Stirling, Ian, Dr.

Canadian Wildlife Service
Environment Canada
5320 - 122 Street
Edmonton, Alberta
T6H 3S5

Tel: (403) 435-7349
Fax: (403) 435-7359

In this project, a variety of sub-projects are conducted around the overall thread of studying the ecological interrelationships of polar bears. The project works in several parts of the Arctic, depending on what is being projected and where funds become available. For 1992, the team anticipates working on population ecology and movements of polar bears in the northern Beaufort Sea, on the behaviour of free-ranging polar bears at Radstock Bay (east of Résolute), and possibly on population ecology of polar bears and movements in northern Baffin Bay and Greenland.

Energy Composition and its Effect on Overwintering Success in Babbage River Dolly Varden Char (Salvelinus malma)

Project: 68-89

Period: 5 May - 1 June

Area: Babbage River Area

Name: Sandstrom, Steve

Department of Fisheries and Oceans
501 University Crescent
Winnipeg, Manitoba
R3T 2N6

Tel: (204) 983-5287
Fax: (204) 984-2403

This project sets out to determine whether differences exist in energy accumulation, allocation, and utilization within and between the different life history stages of Dolly Varden char and what effect this has on their ability to overwinter successfully. The knowledge of the limit to which an overwintering site can support fish, and which fish show an increased susceptibility to winter mortality will allow for the development of a more informed management plan for the population.

Arctic Marine Fish Ecology **Project:** 107-88

Period: 13 May - 5 June

Area: Resolute Passage Ice Camp

Name: Crawford, Richard, Dr.

Freshwater Institute
Department of Fisheries and Oceans
501 University Crescent
Winnipeg, Manitoba
R3T 2N6

Tel: (204) 983-5285
Fax: (204) 984-2403

Fixed location fisheries acoustics techniques will be used to study Arctic and schooling behaviour under ice, in relation to the proximity of the ice edge (if near Resolute) and predators (ringed seals). Acoustics will be truthed with vertical gill nets and plankton drogues. Studies will be coordinated with ongoing marine mammal behaviour studies.

Marine Mammal Bioacoustics **Project:** 55-86

Period: 15 May - 10 June

Area: North of Tuktoyaktuk along Ice Edge

Name: Cosens, Susan E.

Freshwater Institute
Department of Fisheries and Oceans
501 University Crescent
Winnipeg, Manitoba
R3T 2N6

Tel: (204) 983-8838
Fax: (204) 984-2403

To estimate propagation distance of beluga sounds and assess their vulnerability to masking by ship noise. Data will be gathered on call structure and source levels, ambient noise and vessel noise characteristics. The database is being expanded to include Beaufort Sea belugas which may behave differently than High Arctic belugas because of differences in their acoustic environments.

Responses of Beluga Whales to Vessel Noise **Project:** 235-91

Period: 15 May - 15 June

Area: Tuktoyaktuk Area

Name: Cosens, Susan E.

Freshwater Institute
Department of Fisheries and Oceans
501 University Crescent
Winnipeg, Manitoba
R3T 2N6

Tel: (204) 983-8838
Fax: (204) 984-2403

To test responses of Beaufort Sea beluga whale to playback of ship and other noise. Responses to playback of ship noise will be compared with reactions to actual ships. Over the longer term, the research group plans to compare regional and seasonal differences in responses by beluga whales to underwater ship noise.

Muskox Habitat Selection and Calf Survival **Project:** 127-86

Period: 15 May - 30 July

Area: Coppermine

Name: Gunn, Anne, Dr.

Department of Renewable Resources
Government of the NWT
Coppermine, Northwest Territories
X0E 0E0

Tel: (403) 982-7240
Fax: (403) 982-3701

The muskoxen in this stable population migrate seasonally and research is underway to describe the seasonal habitats. Grizzly bear predation is hypothesized as a limiting factor which warrants further investigation.

Ecological Studies of Peary Caribou Conservation **Project:** 84-76

Period: 20 May - 22 July

Area: Northeastern Bathurst Island

Name: Miller, Frank L., Dr.

Canadian Wildlife Service
Environment Canada
Room 210, 4999 - 98 Avenue
Edmonton, Alberta
T6B 2X3

Tel: (403) 468-8927
Fax: (403) 495-2615

To conduct ecological studies of Peary caribou within the Bathurst Island complex, with a longterm goal of providing biologically sound advice on their conservation, especially in relation to human-induced changes in their environment. This phase of the project includes investigations of: 1) spring snow/ice conditions and caribou foraging strategies; 2) numbers, distributions, intra- and inter-island migrations; and 3) chronology of calving, initial calf production, and early survival of calves.

Population Biology of Central Arctic Geese **Project:** 109-91

Period: 25 May - 25 June

Area: Karrak Lake

Name: Alisauskas, Ray T., Dr.

Canadian Wildlife Service
Environment Canada
115 Perimeter Road
Saskatoon, Saskatchewan
S7N 0X4

Tel: (306) 975-4556
Fax: (306) 975-4089

To examine the connection between habitat use, nutrition, activity, and weather in the Canadian Prairies on spring energy gain, nesting effort, nesting success and disease among Ross geese in the Queen Maud Gulf Migratory Bird Sanctuary.

Goose-Habitat Interactions in Queen Maud Gulf Migratory Bird Sanctuary

Project: 139-91

Period: 25 May - 15 August

Area: Karrak Lake

Name: Alisauskas, Ray T., Dr.

Canadian Wildlife Service
Environment Canada
115 Perimeter Road
Saskatoon, Saskatchewan
S7N 0X7

Tel: (306) 975-4556
Fax: (306) 975-4089

To study snow and Ross geese movements after hatch, and to measure their dispersal, growth and survival. Such information will be extremely valuable in understanding impacts of high numbers of geese on Arctic habitats.

Waterfowl Ecology - Central Arctic

Project: 147-86

Period: 25 May -16 August

Area: Kent Peninsula, Victoria Island, NE Coppermine

Name: Bromley, Robert G. D

Department of Renewable Resources
Government of NWT
Box 1320, 5th Floor Scotia
Yellowknife, Northwest Territories
X1A 2L9

Tel: (403) 920-6328
Fax: (403) 873-0293

The dark goose populations of the central Arctic are poorly understood. Current studies focus on determining population delineation and geographic affinities, survival rates and reproductive success of white-fronted and Canada geese. Prenesting ecology, social behaviour and the relationship of reproductive success to lemming and fox cycles are being investigated.

Mechanisms Mediating Freezing Tolerance in Arctic Invertebrates

Project: 174-85

Period: 25 May - 20 August

Area: Alexandra Fiord, Lake Hazen, Hot Weather Creek

Name: Kukal, Olga, Dr.

Department of Biology
University of Victoria
P.O. Box 1700
Victoria, British Columbia
V8W 2Y2

Tel: (604) 721-7102
Fax: (604) 721-7120

The main objective of this study is to improve understanding of how organisms survive freezing. Using species of invertebrates that survive freezing near absolute zero, and sophisticated techniques, such as nuclear magnetic resonance (NMR) and differential scanning calorimetry (DSC), we are in the process of constructing a model for the mechanisms underlying freezing survival. The results relate directly to biomedicine (cryopreservation) and agriculture (frost resistance in crops).

Assessment/Monitoring of Eclipse Sound/ Navy Board Inlet Narwhal

Project: 49-86

Period: 1 June - 31 August

Area: Pond Inlet, Eclipse Sound, Navy Board Inlet, Lancaster Sound

Name: Day, Chris

Freshwater Institute
Department of Fisheries and Oceans
501 University Crescent
Winnipeg, Manitoba
R3T 2N6

Tel: (204) 983-5158
Fax: (204) 984-2402

Narwhal using the Lancaster Sound area are harvested by subsistence hunters from North Baffin Island. In order to properly manage the narwhal stock for longterm sustainable yield, information must be obtained on the harvest, population parameters and migration/distribution patterns. In 1992, information is to be collected on the biological parameters of the harvested segment of the population as well as on hunting effort and events from the Pond Inlet narwhal hunt.

Studies of Population Dynamics of Thick-Billed Murres

Project: 47-75

Period: 1 June - 31 August

Area: Coats Island

Name: Gaston, Anthony J., Dr.

Canadian Wildlife Service
Environment Canada
100 Gamelin Blvd.
Hull, Quebec
K1A 0H3

Tel: (819) 997-6121
Fax: (819) 953-6612

The project team has been banding thick-billed murres at this colony since 1984. For the past two years, it has made intensive studies of breeding success and survival in relation to age and experience. The results will contribute to the management of murre hunting in Newfoundland and Labrador.

Causes and Consequences of Migration to Caribou Population Dynamics

Project: 134-85

Period: 3 June - 15 August

Area: Bay Chimo

Name: Heard, Doug, Dr.

Department of Renewable Resources
Government of the NWT
P.O. Box 1320
Yellowknife, Northwest Territories
X1A 2K9

Tel: (403) 873-7763
Fax: (403) 873-0293

This project will document the effect of caribou migration on the quality and quantity of food available to caribou of each sex throughout the summer. In addition, it will describe the effect of caribou migration on wolf predation rates on caribou, prey selection by age and sex, and pup survival in relation to food availability.

Coastal Coregonid Migratons **Project:** 113-89

Period: 7-14 June

Area: Holmes Creek

Name: Chang-Kue, Ken T.J.

Freshwater Institute
Department of Fisheries and Oceans
501 University Crescent
Winnipeg, Manitoba
R3T 2N6

Tel: (204) 983-5123
Fax: (204) 984-2402

Broad whitefish migrating into Holmes Creek watershed will be tagged with radio transmitters. Their subsequent movements will be followed by fixed-wing aircraft to determine summer destinations in the watershed. Tracking in the fall will also reveal migration timing and their ultimate spawning and overwintering destinations in the lower Mackenzie River.

Assessment of Arctic Char of Lake Hazen Area **Project:** 246-90

Period: 9-25 June

Area: Lake Hazen

Name: Reist, J., Dr.

Freshwater Institute
Department of Fisheries and Oceans
501 University Crescent
Winnipeg, Manitoba
R3T 2N6

Tel: (204) 983-5286 or 5143
Fax: (204) 984-2403

To study genetic and morphological variation in Arctic char in the Holarctic region; to study differentiation of genetic population structure of Arctic char in Lake Hazen and adjacent area; to study basic population structure of Arctic char in Lake Hazen and adjacent area.

Characterization of Habitats Favourable to the Reproduction of Canada Geese

Project: 211-92

Period: 12-16 June

Area: Inukjuak, Povungnituk, Kangirsuk

Name: Bordage, Daniel

Canadian Wildlife Service
Environment Canada
P. O. Box 10100
1141 Route de L'Église
Sainte-Foy, Québec
G1V 4H5

Tel: (418) 649-6133
Fax: (418) 649-6475

Pilot project comprising three components: 1) aerial survey of nesting pairs of Canada geese (this request); 2) characterization of favourable habitats base on Landsat imagery; 3) potential of site utilisation (modelling and computer mapping). This project will evaluate for all of Ungava Peninsula the possibilities of a methodology based on data analyses and satellite imagery.

Devon Island Research Station

Project: 98-87

Period: 12 June - 15 August

Area: Truelove Lowland Region

Name: Robinson, Mike

Arctic Institute of North America
University of Calgary
2500 University Drive N.W.
Calgary, Alberta
T2N 1N4

Tel: (403) 220-7515
Fax: (403) 282-4609

The Devon Island Research Station (DIRS) was established in 1960 to provide scientists with a permanent base from which to conduct "longterm, detailed, integrated observations in several scientific fields". Devon Island was selected as the location for such a facility because "it provided both an ice cap which is significantly affected by a marine environment, and ready access by air and sea". In 1970, Devon Island was chosen by the Canadian International Biological Project (IBP) Tundra Steering Committee to be the site of a Tundra Biome Project.

Effect of Global Warming on Arctic Ecosystems **Project:** 48-88

Period: 15 June - 15 August

Area: Muskox River, Banks Island

Name: Harmsen, Rudolf, Dr.

Department of Biology
Queen's University
Kingston, Ontario
K7L 3N6

Tel: (613) 545-6136
Fax: (613) 545-6617

Over a five-year period, we will monitor interspecific plant competitive interactions in a variety of habitats in an undisturbed climatically variable part of the Canadian Arctic (northern Banks Island). Preliminary studies indicate strong differences in interspecific competitive balances between a number of species, depending on temperature and humidity. The results will allow forecasts for effects of longterm warming trends, which will affect wildlife range assessments. Simultaneously, the project will continue with the marked population of the muskox range indicator species Oxytropis viscida as a continuation of the 1987-91 project on muskox grazing ecology.

Using Landsat to Determine Shorebird Concentrations in the Mackenzie Delta **Project:** 50-91

Period: 15 June - 21 August

Area: Kendall Island Bird Sanctuary, Ellice Island

Name: Gratto-Trevor, Cheri, Dr.

Canadian Wildlife Service
Environment Canada
115 Perimeter Road
Saskatoon, Saskatchewan
S7N 0X4

Tel: (306) 975-6128
Fax: (306) 975-4089

The purpose of this project is to determine whether Landsat imagery can be used to identify important breeding and staging areas for shorebirds in the outer Mackenzie Delta. Identification of critical shorebird habitat will allow for mitigation of any detrimental effects of future oil and gas development on shorebird populations.

Distribution and Abundance of Geese in the Queen Maud Gulf Migratory Bird Sanctuary

Project: 189-90

Period: 20 June - 1 July

Area: Perry River

Name: Alisauskas, Ray T., Dr.

Canadian Wildlife Service
Environment Canada
115 Perimeter Road
Saskatoon, Saskatchewan
S7N 0X4

Tel: (306) 975-4556
Fax: (306) 975-4089

To describe dispersion of Canada, white-fronted, and Brant geese during the nesting season. The results of this study will also allow pinpointing of dense concentrations of Canada and white-fronted geese for future nesting studies.

Arctic Insects and their Adaptations to Extreme Living Conditions

Project: 112-77

Period: 20 June - 10 July

Area: Alexandra Fiord, Ellesmere Island and Tuktoyaktuk

Name: Ring, Richard A., Dr.

Department of Biology
University of Victoria
Victoria, British Columbia
V8W 2Y2

Tel: (604) 721-7102
Fax: (604) 721-7120

The main emphasis of the project is to elucidate the adaptations of insects that allow them to survive long, cold winters (i.e. their cold tolerance strategies) and short growing seasons (i.e. their life cycle strategies and phenology). The results of these studies relate directly to biomedicine (cell and tissue cryoprotection) and to agriculture and forestry (forest resistance in plants). In addition, the goals of the Biological Survey of Canada (Terrestrial Arthropods) and the Royal Society "Global Change Program" will be addressed.

Ecology, Barren-Ground Grizzly Bears **Project:** 212-88

Period: 24-27 June

Area: Coppermine, NWT

Name: Case, Ray, Dr.

Department of Renewable Resources
Government of the NWT
Yellowknife, Northwest Territories
X1A 2L9

Tel: (403) 920-8067
Fax: (403) 873-0293

The reproductive status of adult female barren-ground grizzly bears is being investigated in the Coppermine area. Fifteen adult female bears have been radio collared and age of first reproduction, breeding interval, litter size, cub survival and seasonal movements are being determined.

Wager Bay Park Proposal - Canadian Parks Service **Project:** 170-92

Period: 25 June - 30 July

Area: Wager Bay Area

Name: Seale, Elizabeth

Canadian Parks Service
Environment Canada
Box 1166
Yellowknife, Northwest Territories
X1A 2N8

Tel: (403) 873-8477
Fax: (403) 873-8185

Research towards development of a national park proposal; this research includes the continuation of an archaeological survey begun in 1991 and the examination of visitor activity potential, important geological themes and park management issues.

Coppermine Raptor Survey **Project:** 143-87

Period: 1-4 July

Area: Coppermine

Name: Shank, Christopher

Department of Renewable Resources
Government of the NWT
P.O. Box 1320
Yellowknife, Northwest Territories
X1A 2L9

Tel: (403) 920-6190
Fax: (403) 873-0293

Productivity of birds of prey has been regularly monitored in the Coppermine area since 1983. Snowmobile surveys are done in early May to determine number of gyrfalcons nesting. Helicopter surveys are done in early July to determine nesting success of gyrfalcons, peregrine falcons, rough-legged hawks, and golden eagles.

Wetland Mapping of the Old Crow Flats, Yukon **Project:** 271-92

Period: 1-10 July

Area: Old Crow Flats, Yukon

Name: Hawkings, James S.

Canadian Wildlife Service
Environment Canada
Box 6010, 100 Hamilton Blvd.
Whitehorse, Yukon
Y1A 5L7

Tel: (403) 668-2285
Fax: (403) 667-7962

Wetland habitats on the Old Crow Flats will be mapped using Landsat Thematic Mapper and SPOT Panchromatic satellite imagery. Previously gathered field data on the vegetation and wetlands will be augmented with field data gathered in 1992 to provide the ground-truth information for this mapping.

Wildlife Key Habitat Mapping **Project:** 276-92

Period: 1-30 July

Area: Bonnet Lake, Yukon, Canoe Lake, NWT

Name: Loewen, Valerie

Department of Renewable Resources
Government of the Yukon
Box 2703 - R5A
Whitehorse, Yukon
Y1A 2C6

Tel: (403) 667-5281
Fax: (403) 668-4365

Vegetation/land cover maps in the Aklavik traditional hunting and trapping area of the Inuvialuit Settlement Region are being prepared using digital image analysis (remote sensing). Wildlife habitat maps will be developed by overlaying wildlife location/distribution information onto vegetation/land cover types. Analysis of variances between wildlife locations and habitat parameters will improve the ability to manage wildlife and their habitats.

Beluga Monitoring **Project:** 92-89

Period: 1 July - 20 August

Area: Coastline from Tuktoyaktuk to King Point

Name: Robinson, Neil G.

Department of Fisheries and Oceans
Box 1871
Inuvik, Northwest Territories
X0E 0T0

Tel: (403) 979-3314
Fax: (403) 979-4330

This project involves flying the coastline from Tuktoyaktuk to King Point to check for dead beluga whale that have washed ashore. This is done during and after the beluga hunt. The objective is to provide some idea as to lost landed animals.

Effect of Neck Collars on Goose Survival **Project:** 106-91

Period: 10-25 July

Area: Queen Maud Gulf Migratory Bird Sanctuary

Name: Alisauskas, Ray T., Dr.

Canadian Wildlife Service
Environment Canada
115 Perimeter Road
Saskatoon, Saskatchewan
S7N 0X4

Tel: (306) 975-4556
Fax: (306) 975-4089

To compare survival rate using legband recovery between neck-collared and non-neck-collared geese. This study will determine if neck collar programs are an appropriate method to estimate survival in geese.

Canada Goose Banding and Surveys on Southampton Island **Project:** 262-90

Period: 10 July - 20 August

Area: Cape Kendall, Coral Harbour

Name: Caswell, Dale F., Dr.

Canadian Wildlife Service
Environment Canada
513-269 Main Street
Winnipeg, Manitoba
R3C 1B2

Tel: (204) 983-5260
Fax: (204) 983-4506

Canada geese will be surveyed, captured and marked with coded neckbands. Subsequent observations of the birds in migration and wintering areas will provide information on distribution, survival and other population parameters for effective management of this breeding population. The project is part of an international program involving wildlife agencies and non-government groups in Canada and the USA.

Canada Goose Banding and Surveys on West Hudson Bay

Project: 105-91

Period: 10 July - 20 August

Area: Eskimo Point Area

Name: Caswell, Dale F., Dr.

Canadian Wildlife Service
Environment Canada
513 - 269 Main Street
Winnipeg, Manitoba
R3C 1B2

Tel: (204) 983-5260
Fax: (204) 983-4506

Canada geese will be captured and marked with coded neckbands and legbands. Subsequent observations of the birds in migration and wintering areas will provide information on distribution, survival and other population parameters for effective management of this breeding population. This project is part of an international program involving wildlife agencies and non-government groups in Canada and the USA.

Canada Goose Banding and Surveys on Baffin Island

Project: 265-90

Period: 10 July - 20 August

Area: Niko Island, Cape Dominion

Name: Caswell, Dale F., Dr.

Canadian Wildlife Service
Environment Canada
513 - 269 Main Street
Winnipeg, Manitoba
R3C 1B2

Tel: (202) 983-5260
Fax: (202) 983-4506

Canada geese will be surveyed and captured and marked with coded neckbands and legbands. Subsequent observations of these birds in migration and wintering areas will provide information on distribution, survival and other population parameters for effective management of this breeding population. The project is part of an international program involving wildlife agencies and non-government groups in Canada and the USA.

North Slope Arctic Char Assessments **Project:** 60-89

Period: 15 July - 20 September

Area: Babbage River and Big Fish River Areas

Name: Lemieux, Pierre

Department of Fisheries and Oceans
Box 1871
Inuvik, Northwest Territories
X0E 0T0

Tel: (403) 979-3314
Fax: (403) 979-4330

1) Enumerate population using deflection - board weir.
2) Continue medium-term research to formulate an ecological model for North Slope char.
3) Assess the potential for domestic/commercial fisheries.

Ecology of Pollinization, Hershel Island **Project:** 277-91

Period: 18 July - 1 August

Area: Herschel Island

Name: Comtois, Paul

Department of Geography
University of Montreal
P. O. Box 6128, Station A
Montreal, Quebec
H3C 3J7

Tel: (514) 343-8029
Fax: (514) 343-8008

Following a first visit to Hershel Island in 1991, it was decided to concentrate the study on the competition (BOMBUS SPP) among synchronously flowering plants for the same pollinating insects, but with opposing floral morphology, i.e. members of the scrophulariaceae and legume families.

Goose Banding in the Central Arctic **Project:** 146-81

Period: 20 July - 15 August

Area: Shepherd Bay, Inglis River

Name: Kerbes, R. H.

Canadian Wildlife Service
Environment Canada
115 Perimeter Road
Saskatoon, Sascatchewan
S7N 0X4

Tel: (306) 975-4087
Fax: (306) 975-4089

White-fronted geese and small Canada geese are to be captured and marked with coded neckbands. Subsequent monitoring of those birds in their migration and wintering grounds by a network of observers will provide updated information on distribution, survival and other topics important for effective conservation. This is part of a large cooperative international program which involves wildlife agencies and non-government groups in Canada, USA, Mexico and Russia States.

Narwhal Movements and Behaviour **Project:** 159-83

Period: 24 July - 24 August

Area: Tremblay Sound, Pond Inlet Area

Name: Kingsley, M.

Maurice Lamontagne Institute
Department of Fisheries and Oceans
850 Route de la Mer
Mont-Joli, Quebec
G5H 3Z4

Tel: (418) 775-0825
Fax: (418) 775-0542

To study the movements and behaviour, including dive behaviour, of narwhal on their summering grounds using radio tags and aerial distribution surveys. Objectives: to define stock structure, identify feeding areas, and improve the design of census surveys.

Tugaat River - Population Assessment **Project:** 173-86

Period: 24 July - 12 September

Area: Tugaat River Area

Name: Day, Chris

Freshwater Institute
Department of Fisheries and Oceans
501 University Crescent
Winnipeg, Manitoba
R3T 2N6

Tel: (204) 983-5158
Fax: (204) 984-2402

In order to manage Arctic char stocks in the Pond Inlet area, information must be collected on exploitation rates, population parameters and distribution/migration patterns. In 1989, a fish weir was constructed on the Iqaluit River (Tay Sound) to monitor the upstream migration of Arctic char. In 1992, the same kind of assessment using a fish weir will be done on the Tugaat River (Milne Inlet).

Climate Change and the Latitudinal Treeline **Project:** 248-91

Period: 27 July - 15 August

Area: Cape Bathurst, Tuktoyaktuk Area, Anderson River Area

Name: Freedman, Bill, Dr.

Department of Biology
Dalhousie University
Halifax, Nova Scotia
B3H 4J1

Tel: (902) 494-3737
Fax: (902) 494-3736

The dynamics and character of the subarctic treeline will be examined as a barometer of ecological response to climate change induced by the greenhouse effect. Researching in the western Arctic has several objectives: 1) in the shorter term, to describe the phytosociological and physical character of ecosystems at, just below, and above the latitudinal tree-line. Factors influencing vegetation would be examined experimentally, using field greenhouse and open-top enclosures, fertilizer and watering trials, transplants, and manipulations of snow persistence, and 2) over the longer term, to establish permanent plots to monitor vegetation.

Environmental Physiology of Marine Invertebrates **Project:** 95-91

Period: 1-30 August

Area: Resolute Bay

Name: Graham, Mark Stephen, Dr.

Vancouver Public Aquarium
P.O. Box 3232, Stanley Park
Vancouver, British Columbia
V6B 3X8

Tel: (604) 685-3364
Fax: (604) 631-2529

Several species of planktonic and benthic invertebrates from Lancaster Sound region will be used to evaluate the metabolic cost of making a living in the Arctic. Oxygen consumption techniques will be used as a metabolic indicy. Trophic status of specimens will be evaluated later by stable isotope analysis.

Productivity of Arctic Marine Food Chains **Project:** 62-87

Period: 1-31 August

Area: Resolute Area

Name: Welch, H.E., Dr.

Freshwater Institute
Department of Fisheries and Oceans
501 University Crescent
Winnipeg, Manitoba
R3T 2N6

Tel: (204) 983-5132
Fax: (204) 984-2404

Continued work on important food web components of the high Arctic marine ecosystem. The goal of the 1992-93 work will be to collect overwinter data on biological oceanography, metabolic rates, kelp growth, invertebrate life histories, and ice community dynamics. In addition we will be collaborating with Dr. R. Conover's winter zooplankton work (project 97-83), and Dr. B. Hargrave's winter work (project 209-91) on contaminants accumulation and pathways into the marine food web.

Plant-Animal Interactions as Influenced by Ice in the Pelagic Zone of Barrow Strait

Project: 97-83

Period: 1 August - 31 December

Area: Resolute Bay Area

Name: Conover, R. J., Dr.

Bedford Institute of Oceanography
Department of Fisheries and Oceans
P.O. Box 1006
Dartmouth, Nova Scotia
B2Y 4A2

Tel: (902) 426-3847
Fax: (902) 426-2256

As part of a joint project with the department of Fisheries and Oceans - Winnipeg, this project will examine energy flow on biological production over a 12-month period (dark season too!). We intend to concentrate on how primary production both in the water column and on the ice are utilized and to ascertain the relative importance of each over a full seasonal cycle.

Arctic Marine Microbiological Studies of the Central Canadian Archipelago

Project: 186-90

Period: 8-21 August

Area: Barrow Inlet, Radstock Inlet, Cunningham Inlet

Name: Jannasch, Holger W.

Biology Department
Woods Hole Oceanographic Institution
Woods Hole, Massachusetts
02543 USA

Tel: (508) 548-1400
Fax: (508) 457-2169

To measure the key microbial processes in the degradation of photosynthetically produced organic matter leading to the characteristic suboxic and anoxic pockets in the coastal waters of the Barrow Strait region at the scale of ice scours to those of inlets and bays. We will emphasize the aerobic oxidation of organic carbon and reduced sulfur compounds as well as the anaerobic sulfate reduction, denitrification and methanogenesis. Laboratory work on isolations and pure culture studies will focus on low temperature adaptations of these processes.

Population Dynamics of Banks Island Muskox **Project:** 153-84

Period: 10-15 August

Area: Muskox River

Name: McLean, Bruce D.

Department of Renewable Resources
Government of the NWT
Bag Service # 1
Inuvik, Northwest Territories
X0E 0T0

Tel: (403) 979-7295
Fax: (403) 979-2418

Muskoxen on Banks Island may now exceed 40,000 animals. Data on the age and sex structure and survivorship of the young age classes will be collected. Previous work suggests that annual growth rates may be quite variable. The sampling methods and analysis of age and sex classification surveys will be reviewed.

Late Quaternary Marine Mollusc Assemblages and Paleoceanography, Queen Elizabeth Islands **Project:** 228-92

Period: 10-30 August

Area: Cañon Fiord, Ellesmere Island

Name: Aitken, Alex Edison, Dr.

Department of Geography
University of Toronto
Scarborough Campus
1265 Military Trail
Scarborough, Ontario
M1C 1A4

Tel: (416) 287-7309
Fax: (416) 287-7283

To produce an integrated picture of Late Quaternary environmental change in the northernmost Queen Elizabeth Islands, NWT, through the combined study of glacial and marine sediments and their associated body fossil assemblages. The fossils are useful in inferring the paleoceanography of the region and rates of sedimentation recorded in sedimentary deposits.

Organochlorine Contaminants in Arctic Marine Food Webs

Project: 209-91

Period: 5-15 September

Area: Resolute Bay

Name: Hargrave, B. T., Dr.

Bedford Institute of Oceanography
Department of Fisheries and Oceans
P. O. Box 1006
Dartmouth, Nova Scotia
B2Y 4A2

Tel: (902) 426-3188
Fax: (902) 426-7827

Marine food-web dynamics of organocholorine contaminants studies in an oligotrophic region of the Arctic Ocean from Ice Island (1986-1990) will be extended to an area of higher biological productivity (Resolute Bay) between 1992 and 1996. An over-wintering sampling period (Sept. 1992 to August 1993) will provide the first annual measurements of these organic contaminants in the Arctic marine ecosystem.

Population Dynamics of Broad Whitefish in the Mackenzie River Delta

Project: 198-92

Period: 15 September - 30 October

Area: Wolf Lake, Travaillant Lake, Mackenzie Delta Areas

Name: Tallman, Ross

Freshwater Institute
Department of Fisheries and Oceans
501 University Crescent
Winnipeg, Manitoba
R3T 2N6

Tel: (204) 983-3362
Fax: (204) 983-6285

A study of the broad whitefish in the Mackenzie River delta will apply diverse technologies to solve the problem of estimating stock size while accounting for stock genetic uniqueness. Biochemical genetic, stable isotope and quantitative characteristics of broad whitefish stocks will be examined to determine stock uniqueness. Population numbers will be estimated using a mixed-stock fishery model and hydroacoustic techniques.

BOTANY

Origin and Ecology of the Polar Oasis Sverdrup Pass, Ellesmere Island — **Project:** 135-78

Period: 16 June - 31 July

Area: Sverdrup Pass, Ellesmere Island

Name: Svoboda, Josef, Dr.

Department of Botany
University of Toronto
Erindale Campus
Mississauga, Ontario
L5L 1C6

Tel: (416) 828-5368
Fax: (416) 828-3792

1) To determine the function of soil algae in polar desert (in cooperation with the Czechoslovak Academy of Sciences); 2) to establish stress tolerance hierachy of vascular plants of polar deserts; and 3) to study growth rates of cushion plants and reconstruction of past climate in the High Arctic.

Effects of Predicted Climate Change on High Arctic Plants — **Project:** 150-88

Period: 17 June - 19 August

Area: Alexandra Fiord, Princess Marie Bay, Eastwind Lake, Sverdrup Pass

Name: Henry, Gregory H.R., Dr.

Geography and Canadian
Circumpolar Institute
University of Alberta
Edmonton, Alberta
T6G 2H4

Tel: (403) 492-4156
Fax: (403) 492-7598

Arctic plant species will respond individualistically to the predicted climate change. This may result in changes in structure and function of terrestrial ecosystems. The project will use field experiments to investigate the phenology and growth response of selected High Arctic plants. These studies will be part of the Canadian component of the International Tundra Experiment (ITEX).

Determination of Fossil Plant DNA Sequences and Comparison with Contemporary Homologous Sequences

Project: 284-91

Period: 24 June - 29 July

Area: Axel Heiberg Island, Fosheim Peninsula, Fossil Forest

Name: LePage, Ben A.

Department of Geology
University of Saskatchewan
Saskatoon, Saskatchewan
S7N 0W0

Tel: (306) 966-8587
Fax: (306) 966-8593

In 1985, an estimated 45-million-year old fossil forest was discovered on Axel Heiberg Island. Well-preserved fossils (fruits, needles, leaves, seed cones, and seeds) of conifer and deciduous tree species are being recovered at this site. Small amounts of DNA have been extracted from these fossil tissues and isolation of portions of the ribosomal DNA and ribulose biphosphate carboxylase large genesis is now underway. Comparisons between the sequences of fossil and contemporary genes should allow a direct evaluation of the rates of evolution.

Ecosystem Development with Circumpolar Polar Deserts

Project: 260-91

Period: 26 June - 15 August

Area: Truelove Inlet

Name: Bliss, Lawrence C., Dr.

Department of Botany
University of Washington
KB-15
Seattle, Washington
98195 USA

Tel: (206) 543-8917
Fax: (206) 685-1728

This research proposal is designed to understand polar desert ecosystem structure and development on a circumpolar basis. The project concentrates upon: 1) soil processes; 2) cryptogamic crust development and ecophysiology; 3) the role of vascular plants including their ecophysiology; and 4) the diversity and function of invertebrates in decomposition and soil development. Understanding how polar deserts develop and function may help explain the development of deglaciated lands following ice retreat in the past 12,000 years.

Wetland Mapping of the Old Crow Flats, Yukon **Project:** 271-92

Period: 1-10 July

Area: Old Crow Flats, Yukon

Name: Hawkings, James S.

Canadian Wildlife Service
Environment Canada
Box 6010, 100 Hamilton Blvd.
Whitehorse, Yukon
Y1A 5L7

Tel: (403) 668-2285
Fax: (403) 667-7962

Wetland habitats on the Old Crow Flats will be mapped using Landsat Thematic Mapper and SPOT Panchromatic satellite imagery. Previously gathered field data on the vegetation and wetlands will be augmented with field data gathered in 1992 to provide ground-truth information for this mapping.

An Analysis of the Spectral Properties of Arctic Surfaces for Detection and Monitoring the Effects of Global Change **Project:** 161-87

Period: 25 July - 5 August

Area: Tuktoyaktuk Area

Name: Pearce, Cheryl Marie, Dr.

Department of Geography
University of Western Ontario
Social Sciences Centre
London, Ontario
N6A 5C2

Tel: (519) 661-3423
Fax: (519) 661-3292

The unique characteristics of space imagery could provide the means for analyzing the early responses of arctic surfaces to global warming over very large areas on a regular basis. Research is being conducted to examine what distinguishes arctic surfaces spatially and spectrally and if satellite data can be used to provide reliable information on biological and physical responses to climate change over time.

A Re-evaluation of Disturbance Research in the Tundra Near Tuktoyaktuk **Project:** 231-89

Period: 25 July - 15 August

Area: Caribou Hills, Shingle Point, Parsons Lake, Tuktoyaktuk

Name: Wein, Ross W., Dr.

Canadian Circumpolar Institute/
Forest Science
University of Alberta
855 General Services Building
Edmonton, Alberta
T6G 2H1

Tel: (403) 492-2038
Fax: (403) 492-4323

In the 1970s, disturbance surveys and experiments on a wide range of topics provided short-term results and predictions of recovery rates. We are collecting comparable data to validate the short-term predictions. Also, some disturbances provide partial analogues related to climate change predictions. To date, we have documented recovery on oil spill plots, summer seismic lines and experimental off-road vehicle trails. In 1992, we want to emphasize recovery after forest-tundra fires and revegetation experiments.

Grass Research in the Canadian Arctic **Project:** 233-90

Period: 25 July - 25 August

Area: Viscount Melville Sound, Queen Elizabeth Islands, Alert

Name: Aiken, S., Dr.

Research Branch
Canadian Museum of Nature
P.O. Box 3443, Station D
Ottawa, Ontario
K1P 6P4

Tel: (613) 990-6438
Fax: (613) 990-6451

To monitor ozone levels in the Arctic and Antarctic by analyzing the changing levels of flavonoid compounds in the grass Deschampsia that occurs in both hemispheres. This is a cooperative project with AES, the GSC, the Scott Polar Research Institute, and DSIR New Zealand. Field work at AES stations in Eureka and Alert will establish that sampling in the Arctic is done in the same way as sampling in the Antarctic, so that analyses and results provide comparable baseline observations. From this, herbarium specimens collected 30-40 years before formal AES monitoring began can be used to indicate previous ozone levels.

Climate Change and the Latitudinal Treeline **Project:** 248-91

Period: 27 July - 15 August

Area: Cape Bathurst, Tuktoyaktuk Area, Anderson River Area

Name: Freedman, Bill, Dr.

Department of Biology
Dalhousie University
Halifax, Nova Scotia
B3H 4J1

Tel: (902) 494-3737
Fax: (902) 494-3736

The dynamics and character of the subarctic treeline will be examined as a barometer of ecological response to climate change induced by the greenhouse effect. Researching in the western Arctic has several objectives: 1) in the shorter term, to describe the phytosociological and physical character of ecosystems at, just below, and above the latitudinal tree-line. Factors influencing vegetation would be examined experimentally, using field greenhouse and open-top enclosures, fertilizer and watering trials, transplants, and manipulations of snow persistence, and 2) over the longer term, to establish permanent plots to monitor vegetation.

Longterm Vegetation Stability of Arctic Island "Oases" **Project:** 71-92

Period: 5-19 August

Area: Polar Bear Pass and Hot Weather Creek

Name: Gajewski, Konrad

Centre d'études nordiques
Université Laval
Sainte-Foy, Quebec
G1K 7P4

Tel: (418) 656-2756
Fax: (418) 656-2978

The objectives of this project are the investigation of the longterm stability of two Arctic "oases" - Polar Bear Pass on Bathurst Island and Hot Weather Creek on Ellesmere Island. Pollen analysis of lake sediments will be used to document the vegetation history of these oases. Modern pollen samples will be collected this field season and used to calibrate relationships between the pollen rain and the modern vegetation and climate.

CLIMATOLOGY

Thaw Depth Monitoring, Mackenzie Valley **Project:** 181-91

Period: 10 March - 15 August

Area: Fort Simpson, NWT, to the Arctic coast

Name: Nixon, Mark F.

Geological Survey of Canada
Energy, Mines and Resources
601 Booth Street
Ottawa, Ontario
K1A 0E8

Tel: (613) 992-2469
Fax: (613) 992-2468

A network of thaw depth monitoring sites is being established from Fort Simpson to the Arctic coast. The goals are to collect baseline information about this climatically controlled parameter and to monitor change over time. This year's work will include survey of installed sites north of Norman Wells and new installations from Fort Simpson to Norman Wells.

Glacier Research in the Queen Elizabeth Islands **Project:** 10-73

Period: 10 April - 12 May

Area: Meighen, Melville and Devon Islands and Agassiz Ice Cap

Name: Koerner, Roy, Dr.

Geological Survey of Canada
Energy, Mines and Resources
601 Booth Street
Ottawa, Ontario
K1A 0E8

Tel: (613) 996-7623
Fax: (613) 996-9990

To measure mass balance on Meighen, Melville, Devon and Northern Ellesmere ice caps for climate monitoring; to test new GSC electro-mechanical drill on Agassiz Ice Cap and collect samples for paleoclimate studies; to collect snow samples for pollen analysis for environmental monitoring; to introduce two St. Petersburg Arctic and Antarctic Institute scientists to Canadian field glaciology; and to collect snow samples for AES, Dalhousie University and the University of Stockholm.

A Seasonal Sea Ice Monitoring and Modelling Site (SIMMS '92) **Project:** 128-90

Period: 10 April - 20 June

Area: Resolute Passage

Name: Barber, David G., Dr.

Earth-Observations Laboratory
Department of Geography
University of Waterloo
Waterloo, Ontario
N2L 3G1

Tel: (519) 885-1211
Fax: (519) 888-6768

SIMMS is a five-year multidisciplinary research program designed to develop analysis methodologies by which visible and micro-wavelength remote sensing data may be used to monitor changes in ocean-ice-atmosphere processes. Observational and modelling programs are conducted coincidentally during the seasonal transition from winter to summer.

Past and Present Climate of Queen Elizabeth Islands **Project:** 61-73

Period: 25 April - 30 June

Area: Hot Weather Creek, Agassiz Ice Cap

Name: Alt, Bea, Dr.

Geological Survey of Canada
Energy, Mines and Resources
601 Booth Street
Ottawa, Ontario
K1A 0E8

Tel: (613) 996-0377
Fax: (613) 996-9990

1) To examine present synoptic climate in the Queen Elizabeth Islands (QEI) for application to paleoenvironmental studies and modern global environmental change.
2) To collect field station weather data in data sparse areas.
3) To install, standardize and service automatic weather stations in GSC High Arctic Global Change Observatory Area and on QEI ice caps.

Baffin Island Mesoclimate Autostation Network **Project:** 115-79

Period: 28 April - 28 July

Area: Penny & Barnes Ice Caps, Amadjuak & Nettilling Lakes, Isortoq River

Name: Jacobs, John D.

Department of Geography
Memorial University
St. John's, Newfoundland
A1B 3X9

Tel: (709) 737-7417
Fax: (709) 737-4000

This field project involves the operation of climate autostations at remote sites on Baffin Island. The data from the stations and from concurrent field studies are used in modelling of the mesoscale climate, calibration of proxy records of past climates, and in monitoring for regional effects of global change.

Paleoclimatic Studies of Lake Sediments from the High Arctic **Project:** 136-88

Period: 1 May - 12 August

Area: Taconite Inlet, Northern Ellesmere Island

Name: Bradley, Raymond S., Dr.

Department of Geology
and Geography
Morrill Science Center
University of Massachusetts
Amherst, Massachusetts
01003 USA

Tel: (413) 545-2794
Fax: (413) 545-1200

Meteorological, hydrological, limnological and sedimentological studies are being carried out in two coastal lake basins on northern Ellesmere Island. The lakes contain laminated sediments which may contain a year-by-year record of past climatic variations over the last few hundred to a few thousand years. The objective of the study is to understand the relationship between climate, runoff, sediment flux and contemporary limnological processes today so as to have a better basis for understanding the sedimentary record of the past.

Mass Balance of White and Baby Glacier and Lake Ice Investigations, Expedition Fiord, Axel Heiberg Island **Project:** 123-83

Period: 15-29 May

Area: Colour Lake, Expedition Fiord, Axel Heiberg Island

Name: Adams, Peter W.

Department of Geography
Trent University
P.O. Box 4800
Peterborough, Ontario
K9J 7B8

Tel: (705) 748-1440
Fax: (705) 748-1246

To study processes of accumulation and ablation on the mass balance of Baby and White Glaciers. To study the role of ice cover on the hydrology and chemistry of Colour Lake and recovery of climate data from an automatic station near the lake. Preliminary measurements of sulfur springs output.

Climatology and Meteorology of High Arctic Oases **Project:** 57-78

Period: 5-12 July

Area: Alexandra Fiord, Truelove Lowland, Polar Bear Pass

Name: Labine, Claude, Dr.

Department of Geography
University of Alberta
10429 - 87th Avenue
Edmonton, Alberta
Y6E 2P4

Tel: (403) 461-5158
Fax: (403) 450-2531

To determine the meteorological and climatological characteristics of High Arctic oases. This work is being undertaken at three sites: Alexandra Fiord on Ellesmere Island, Truelove Lowland on Devon Island and Polar Bear Pass on Bathurst Island. The research has been carried out at a micro-climatic and meso-climatic level at Alexandra Fiord and the main purpose of the research at this stage is to maintain a longterm database from all three sites.

Grass Research in the Canadian Arctic **Project:** 233-90

Period: 25 July - 25 August

Area: Viscount Melville Sound, Queen Elizabeth Islands, Alert

Name: Aiken, S., Dr.

Research Branch
Canadian Museum of Nature
P.O. Box 3443, Station D
Ottawa, Ontario
K1P 6P4

Tel: (613) 990-6438
Fax: (613) 990-6451

To monitor ozone levels in the Arctic and Antarctic by analyzing the changing levels of flavonoid compounds in the grass Deschampsia that occurs in both hemispheres. This is a cooperative project with AES, the GSC, the Scott Polar Research Institute, and DSIR New Zealand. Field work at AES stations in Eureka and Alert will establish that sampling in the Arctic is done in the same way as sampling in the Antarctic, so that analyses, and results provide comparable baseline observations. From this, herbarium specimens collected 30-40 years before formal AES monitoring began can be used to indicate previous ozone levels.

Longterm Vegetation Stability of Arctic Island "Oases" **Project:** 71-92

Period: 5-19 August

Area: Polar Bear Pass and Hot Weather Creek

Name: Gajewski, Konrad

Centre d'études nordiques
Université Laval
Sainte-Foy, Quebec
G1K 7P4

Tel: (418) 656-2756
Fax: (418) 656-2978

The objectives of this project are the investigation of the longterm stability of two Arctic "oases", Polar Bear Pass on Bathurst Island and Hot Weather Creek on Ellesmere Island. Pollen analysis of lake sediments will be used to document the vegetation history of these oases. Modern pollen samples will be collected this field season and used to calibrate relationships between the pollen rain and the modern vegetation and climate.

GENERAL

Arctic Gallery **Project:** 219-92

Period: 1 May - 15 June

Area: Ellesmere and Axel Heiberg Islands, Mackenzie Delta, Bathurst Island

Name: Thiessen, Carol

Public Programmes
Canadian Museum of Nature
P.O. Box 3443, Station D
Ottawa, Ontario
K1P 6P4

Tel: (613) 991-0439
Fax: (613) 991-0403

To conduct backround research for the development and design of a new permanent exhibit gallery on the Arctic, to be located at the Victoria Memorial Museum building in Ottawa. The exhibit will be multidisciplinary and will focus on the natural history of the Arctic. The gallery is scheduled to open to the public in spring 1995.

Ellesmere Island National Park Reserve Field Support **Project:** 99-87

Period: 1 May - 31 August

Area: Tanquary Fiord, Lake Hazen

Name: Thorpe, Bill

Auyuittuq/Ellesmere Island
National Park Reserves
Canadian Parks Service
Environment Canada
P.O. Box 353
Pangnirtung, Northwest Territories
X0A 0R0

Tel: (819) 473-8828
Fax: (819) 473-8612

To assist in the operation and management of Ellesmere Island National Park Reserve.

Regional Analysis - National Park Region 23 - Whale River Region

Project: 89-90

Period: 28 June - 3 July

Area: Kuujjaq

Name: MacNeil, Ian

Parks Canada
Environment Canada
Les Terrasses de la Chaudière
10 Wellington Street
Hull, Quebec
K1A 0H3

Tel: (819) 997-4928
Fax: (819) 994-5140

Three natural areas of Canadian significance have been identified in national park region 23. This survey will compare and rank each of these areas to determine the most desirable area for potential future national park purposes.

Human Circadian Rhythms under Unusual Photoperiodicity

Project: 164-89

Period: 1-31 July

Area: Isachsen or Eureka vicinity

Name: Suedfeld, Peter, Dr.

Department of Psychology
University of British Columbia
2136 West Mall
Vancouver, British Columbia
V6T 1Z4

Tel: (604) 822-5713
Fax: (604) 822-6923

The objective is to study the effects of 24-hour natural daylight on human circadian rhythms in the absence of mechanical time cues. Approximately eight people will spend one month at Isachsen or Eureka; watches and clocks will be inaccessible except to the field director. Activity cycles, stress hormone secretion, energy exchange, psychophysiological functioning, and a variety of psychological processes, will be measured.

Field Survey of Torngat Mountains Area, Labrador

Project: 255-90

Period: 5-10 July

Area: Cape Vivak

Name: MacNeil, Ian

Parks Canada
Environment Canada
Les Terrasses de la Chaudière
10 Wellington Street
Hull, Quebec
K1A 0H3

Tel: (819) 997-4928
Fax: (819) 994-5140

The Torngat Mountains area in Northern Labrador has been identified as an area of potential interest as a future national park. This field study, which includes representatives from the province and the Labrador Inuit Association, will identify boundary options.

Erosion Studies: Fossil Forest Sites

Project: 83-92

Period: 7-18 July

Area: Geodetic Hills, Fossil Forest Hill

Name: Gruchy, Charles, Dr.

Canadian Conservation Institute
Department of Communications
1030 Innes Road
Ottawa, Ontario
K1A 0C8

Tel: (613) 998-3721
Fax: (613) 998-4721

To finalize studies of the erosion of Fossil Forest Hill; to finish any remaining mapping of stumps; to check condition of grave markers on Beechey Island; and to survey fossil fishers of Mokka Fjord.

Biostratigraphy of a Tertiary Vertebrate Locality on Strathcona Fiord **Project:** 108-92

Period: 8-23 July

Area: Strathcona Fiord

Name: Harington, C. R., Dr.

Paleobiology Division
Canadian Museum of Nature
P. O. Box 3443, Station D
Ottawa, Ontario
K1P 6P4

Tel: (613) 954-0351
Fax: (613) 954-4724

The objective of this joint study is to identify remains of a partial beaver skeleton and a bear-like heel bone collected by J.G. Fyles in 1988 and 1989 at a site near Strathcona Fiord, and to collect further vertebrate and other fossils so as to contribute further to the knowledge of: 1) a unique "boreal forest" environment that existed in Pleocene time; and 2) the geological age of the site.

Natural Areas Survey **Project:** 80-90

Period: 25-31 July

Area: Polar Bear Pass, Bathurst Island and Grinnel Peninsula

Name: Harvey, Douglas

Canadian Parks Service
Environment Canada
Les Terrasses de la Chaudière
Room 205
10 Wellington Street
Hull, Quebec
K1A 0H3

Tel: (819) 997-4212
Fax: (819) 994-5140

The Canadian Parks Service is interested in establishing a new national park in the Parry Islands. Field studies will focus on areas of interest on Bathurst Island and Grinnel Peninsula.

Banks Island National Park Establishment **Project:** 270-90

Period: 25-31 July

Area: Thomsen River Valley, Northern Banks Island

Name: Johnston, James C.

Canadian Parks Service
Environment Canada
Les Terrasses de la Chaudière
Room 210
10 Wellington Street
Hull, Quebec
K1A 0H3

Tel: (819) 994-3013
Fax: (819) 994-5140

The Canadian Parks Service has been negotiating the establishment of a national park in the Thomsen River Valley of Northern Banks Island for several years. Negotiations are expected to be successful in the near future and park establishment is anticipated by summer 1992. Final work on park establishment will involve a park agreement signing ceremony to be held in the park area or at Sachs Harbour.

North Baffin Island National Park Proposal **Project:** 75-90

Period: 1-8 August

Area: Pond Inlet Area

Name: Harvey, Douglas

Canadian Parks Service
Environment Canada
Les Terrasses de la Chaudière
Room 205
10 Wellington Street
Hull, Quebec
K1A 0H3

Tel: (819) 997-4212
Fax: (819) 994-5140

The Canadian Parks Service has been working to establish a new national park in the Pond Inlet area since the early 1980s. The focus of this work is to determine the final boundaries and siting of tourism/park facilities.

Natural Area Survey, Southampton Island **Project:** 245-91

Period: 1-8 August

Area: Southampton Island Area

Name: Harvey, Douglas

Canadian Parks Service
Environment Canada
Les Terrasses de la Chaudière
Room 205
10 Wellington Street
Hull, Quebec
K1A 0H3

Tel: (819) 997-4212
Fax: (819) 994-5140

The Canadian Parks Service is interested in establishing a new national park on Southampton Island. Three areas of interest have been identified and will be examined in the field this summer, including Coats Island.

The Ninth International Northern Research Basins Workshop **Project:** 196-92

Period: 19-22 August

Area: Inuvik

Name: Prowse, T.D., Dr.

National Hydrology
Research Institute
Environment Canada
11 Innovation Boulevard
Saskatoon, Saskatchewan
S7N 3H5

Tel: (306) 975-5737
Fax: (306) 975-5143

In 1975, the National Committees of the International Hydrological Programme (IHP) for Canada, Denmark, Finland, Norway, Sweden, the USA and the USSR established the Working Group on Northern Research Basins (NRB). The working group was to encourage research on the hydrology of basins in northern latitudes where snow, ice and frozen ground play a dominant role. In the past 16 years, eight highly successful symposia have been held in the various circumpolar countries. During 1992, the Ninth International Northern Research Basins Symposium/Workshop will be hosted by the National Hydrology Research Institute of Environment Canada with the meetings being held in Dawson, Whitehorse, Eagle Plains and Inuvik.

Operation and Maintenance of Sarcpa Lake Field Station

Project: 66-91

Period: 1-15 September

Area: Sarcpa Lake, Melville Peninsula

Name: Sherstone, David

Science Institute of the NWT
Igloolik Research Centre
Box 210
Igloolik, Northwest Territories
X0A 0L0

Tel: (819) 934-8836
Fax: (819) 934-8792

Sarcpa Lake on the Melville Peninsula is a scientific field station operated by the Igloolik Research Centre of the Science Institute of the Northwest Territories. The station provides seasonal support (accommodation, laboratory facilities, and field equipment) to scientists working in the area.

GEOLOGY

Sedimentary Processes of the Mackenzie Delta and Adjacent Coast

Project: 252-92

Period: 1 March - 31 August

Area: Ellice Island Area

Name: Hill, Philip R., Dr.

Department of Oceanography
Université du Québec
310 Allée des Ursulines
Rimouski, Quebec
G5L 3A1

Tel: (418) 724-1705
Fax: (418) 723-7234

To study the processes of sediment transport and deposition in the distributary channel mouth region of the Mackenzie Delta and on the adjacent inner shelf and coast.

Mackenzie Delta Permafrost/Geology Transect

Project: 46-86

Period: 5 March - 15 April

Area: Mackenzie Delta Area

Name: Dallimore, S.R.

Geological Survey of Canada
Energy, Mines and Resources
601 Booth Street
Ottawa, Ontario
KIA 0E8

Tel: (613) 992-1658
Fax: (613) 992-2468

A transect consisting of geotechnical boreholes and detailed geophysical studies will document geological, geothermal and geotechnical conditions at three sites. A 550-metre borehole will be drilled near Big Lake, a 350-metre borehole will be drilled near Niglintgak Island, and a 150-metre borehole will be drilled near middle channel.

Permafrost Adjustment to Sedimentary Processes - Mackenzie Delta **Project:** 264-91

Period: 15 March - 15 April

Area: Camp Farwell

Name: Dyke, Larry

Geological Survey of Canada
Energy, Mines and Resources
601 Booth Street
Ottawa, Ontario
K1A 0E8

Tel: (613) 996-1967
Fax: (613) 992-2468

Channel migration, sand bar growth, and coastal erosion are being assessed in terms of how these processes change the temperature of ice-bounded permafrost. This work will be used to predict how changes in the air or water temperature will change the temperature of delta sediments.

Cross-Mackenzie Delta Transect **Project:** 69-91

Period: 15 March - 15 April

Area: Mackenzie Delta Area

Name: Kurfurst, P.J., Dr.

Geological Survey of Canada
Energy, Mines and Resources
401 Lebreton Street, Room 255
Ottawa, Ontario
K1A 0E8

Tel: (613) 992-1755
Fax: (613) 992-2468

A transect consisting of geotechnical boreholes and detailed geophysical studies will document geological, geothermal and geotechnical conditions at three sites. A 550-metre borehole will be drilled near Big Lake, a 350-metre borehole will be drilled near Niglintgak Island and a 150-metre borehole will be drilled near middle channel.

Periglacial Processes **Project:** 32-87

Period: 25 March - 25 August

Area: Tuktoyaktuk Area

Name: Egginton, Paul, Dr.

Geological Survey of Canada
Energy, Mines and Resources
601 Booth Street
Ottawa, Ontario
K1A 0E8

Tel: (613) 992-2451
Fax: (613) 992-1658

Deep-seated creep is being monitored at three geographical locations: Involuted Hill, Lousy Point and Ya Ya Lake. The study requires measurement of slope displacements at seven inclimometer installations at different times of the year. This and subsidiary studies are part of GSC's global change program.

NOGAP Coastal Zone Geotechnics **Project:** 298-91

Period: 28 March - 15 August

Area: Tuktoyaktuk Area

Name: Solomon, Steve

Geological Survey of Canada
Energy, Mines and Resources
Box 1006
Dartmouth, Nova Scotia
B2Y 4A2

Tel: (902) 426-9459
Fax: (902) 426-4104

Coastal erosion and processes of coastal and nearshore sediment transport and geotechnical properties are being investigated. The studies involve geotechnical drilling, surveying and mapping programs. The data acquired will be interpreted in terms of engineering design criteria, potential resource development impacts and for monitoring and predicting the impacts of global climate change.

Permafrost Conditions Beneath Tundra Lakes **Project:** 162-91

Period: 7 April - 10 August

Area: Richards Island, N.W.T.

Name: Burn, C.R., Dr.

Department of Geography
University of British Columbia
217-1984 West Mall
Vancouver, British Columbia
V6T 1Z2

Tel: (604) 822-2985
Fax: (604) 822-6150

The objective is to determine the thermal regime at the bottom of tundra lakes in the Tuktoyaktuk Peninsula - Richards Island region. Knowledge of the rate of permafrost degradation and of the thickness of the seasonally thawed layer, and of how these vary with distance from the lakeshore or with depth of water, are necessary if structures such as a pipeline are to cross lakes.

South Ellesmere Gravity Transects **Project:** 72-92

Period: 27 April - 15 June

Area: South Ellesmere Island

Name: Brown, Robert James, Dr.

Department of Geology
and Geophysics
University of Calgary
Calgary, Alberta
T2N 1N4

Tel: (403) 220-7484
Fax: (403) 284-0074

To measure the bouguer anomaly along transects through Makinson Inlet and Vendom Fiord on Ellesmere Island. The principal transect along Makinson Inlet will give a complete outlook from deep inside the Inglefield Uplift (named the Bache Peninsula Arch) to the central Ellesmere fold belt formations of the eastern border from Vendom Fiord. Previous seismic data and structural mapping will be used to correlate the models.

Effect of Climate Change on Permafrost Geomorphology

Project: 36-83

Period: 10 May - 15 August

Area: Eureka, Black Top Creek, Hot Weather Creek, Sawtooth Mountains

Name: Lewkowicz, Antoni G., Dr.

Department of Geography
University of Toronto
Erindale Campus
Mississauga, Ontario
L5L 1C6

Tel: (416) 828-3930
Fax: (416) 828-5328

The aim of the research is to evaluate the effects of potential climate change on the magnitude and frequency of operation of geomorphological processes on the Fosheim Peninsula. Processes being studied include solifluction, active-layer detachment, retrogressive thaw slumping and thermal contraction cracking.

Paleoenvironmental Change, Truelove Lowland, Devon Island

Project: 180-85

Period: 15 May - 14 August

Area: Truelove Lowland

Name: King, Roger H.

Department of Geography
University of Western Ontario
London, Ontario
N6A 5C2

Tel: (519) 679-2111 Ext. 5006
Fax: (519) 661-3868

The research will focus on reconstructing the paleoenvironmental record preserved in the sediments of a series of shallow lakes in Truelove Lowland, Devon Island. Proxy environmental data from these sediments will be developed and used to establish a longterm, high-resolution record of paleoenvironmental change over the last 40,000 years.

Geological Mapping of the Point Lake Area **Project:** 5-92

Period: 1 June - 31 August

Area: Point Lake, Itchen Lake Area

Name: Stubley, Mike, Dr.

Energy, Mines and Petroleum
Government of the NWT
Box 1320
Yellowknife, Northwest Territories
X1A 2L9

Tel: (403) 920-3344
Fax: (403) 873-0254

To assist and encourage mineral exploration by providing detailed bedrock mapping (1:20,000 to 1:50,000 as appropriate) in the Point Lake - Itchen Lake area.

Metallogeny - Churchill Province **Project:** 295-91

Period: 1 June - 20 August

Area: Rankin Inlet, Whale Cove, Churchill

Name: Miller, A. R., Dr.

Geological Survey of Canada
Energy, Mines and Resources
601 Booth Street
Ottawa, Ontario
K1A 0E8

Tel: (613) 995-4106
Fax: (613) 996-9820

1) Through detailed mapping, document the lithological and structural setting of Archean gold mineralization, and integrate the geologic setting with alteration studies to characterize the types of gold deposits and prospects.
2) To map and document the alteration patterns associated with Archean volcanogenic massive sulphide deposits and prospects.
3) To map and document the extent of fenitization adjacent to late Archean alkaline-carbonatite complex in the Rankin greenstone belt and the relation between alteration and potential fluorine, rare earth elements, uranium, thorium enrichment; and to establish the geochronology of these alkaline intrusions.

Mineral Exploration/Mapping **Project:** 247-90

Period: 1 June - 15 August

Area: Kathleen Lake, Tining Hills, Bathurst Inlet, Hope Bay, Perry River

Name: Gibbins, Walter A., Dr.

Northern Affairs Program
Indian and Northern Affairs
P.O. Box 1500
Yellowknife, Northwest Territories
X1A 2R3

Tel: (403) 920-8216
Fax: (403) 873-5763

To monitor mineral exploration of Arctic islands. To map southeastern Bathurst Inlet. To conduct geochemical and carvingstone sampling at Hope Bay. To conduct reconnaissance of possible meterorite impact (66M/7).

Geological Mapping of the Kaminak Lake Area **Project:** 41-92

Period: 1 June - 31 August

Area: Kanimak Lake Area

Name: Stubley, Mike, Dr.

Energy, Mines and Petroleum
Government of the NWT
Box 1320
Yellowknife, Northwest Territories
X1A 2L9

Tel: (403) 920-3344
Fax: (403) 873-0254

To assist and encourage mineral exploration by providing bedrock mapping at 1:50,000 scale of the Kaminak Lake area including detailed studies of lithology, structure, metamorphism and mineralization.

Geological Investigations in the Napaktulik Lake - Upper Hood River Area **Project:** 178-90

Period: 1 June - 30 August

Area: Western Hood River

Name: Jackson, Valerie, Dr.

Northern Affairs Program
Indian and Northern Affairs
P.O. Box 1500
Yellowknife, Northwest Territories
X1A 2R3

Tel: (403) 920-8552
Fax: (403) 873-5763

The project involves 1:30,000 scale geological mapping of Archean supracrustal rocks and surrounding granitoids in 86I and 86P. Results from 1991 indicate that the project area has a high potential for gold and volcanogenic base metal concentrations.

Geological Mapping of the Anialik River Area **Project:** 45-92

Period: 1 June - 31 August

Area: Anialik River Area

Name: Stubley, Mike, Dr.

Energy, Mines and Petroleum
Government of the NWT
Box 1320
Yellowknife, Northwest Territories
X1A 2L9

Tel: (403) 920-3344
Fax: (403) 873-0254

To assist and encourage mineral exploration by providing detailed bedrock mapping at 1:50,000 to 1:20,000 of the Anialik River area (NTS 76 M/4, 5, 6 and 11).

Geology of High Lake Volcanic Belt **Project:** 230-92

Period: 5 June - 24 August

Area: Mistake Lake

Name: Henderson, J.R., Dr.

Geological Survey of Canada
Energy, Mines and Resources
Room 379, 601 Booth Street
Ottawa, Ontario
K1A 0E8

Tel: (613) 992-5446
Fax: (613) 995-7997

To map bedrock and evaluate minerals of the High Lake Volcanic Belt and adjacent rocks, northern Slave Province (part of 76M). Emphasis in the mapping will be structural geology.

Geology of the Ege Bay - Isortoq Fiord Area **Project:** 302-92

Period: 6 June - 1 August

Area: Isortoq Fiord Area

Name: Jackson, Garth, Dr.

Geological Survey of Canada
Energy, Mines and Resources
601 Booth Street
Ottawa, Ontario
K1A 0E8

Tel: (613) 995-4731
Fax: (613) 995-9273

To map the bedrock in northeast 37C (Koch Island) for publication at 1:100,000 scale. Stratigraphic, metamorphic, geochronological and structural studies are integral parts of the project. Economic studies will include the geochemistry of Archean and Aphebian supracrustal rocks containing iron formation, especially their gold and base metal contents, and the suitability of rocks (eg. ultrabasics and marbles) for carving stone.

Bedrock Geology of the Hepburn Island Map Sheet **Project:** 30-90

Period: 7 June - 25 August

Area: Hepburn Island

Name: King, Janet E., Dr.

Geological Survey of Canada
Energy, Mines and Resources
601 Booth Street
Ottawa, Ontario
K1A 0E8

Tel: (613) 992-4882
Fax: (613) 995-9273

The Hepburn Island bedrock geology project is part of the National Mapping Program's Slave Province Project. It is designed to reassess important stratigraphic structural relations through bedrock mapping, and to carry out associated isotopic studies. Results of this study should assist and encourage mineral exploration.

Geocryologic Processes, Western Arctic Coast **Project:** 39-73

Period: 8 June - 22 August

Area: Garry Island, Illisarvik, East half of Tuktoyaktuk Peninsula, Aklisuktuk and Porsild Pingos

Name: Mackay, J.R., Dr.

Department of Geography
University of British Columbia
Vancouver, British Columbia
V6T 1Z2

Tel: (604) 822-2257
Fax: (604) 822-6150

The major objective is to complete longterm summer and winter field studies on the growth of ice wedges, pingos, and permafrost. A secondary objective is to try to assess the effects of potential climatic change on the growth of ice wedges and on the stability of near surface ice-rich permafrost.

Bedrock Mapping in the Meliadine Lake - Gibson Lake Region

Project: 67-92

Period: 10 June - 30 August

Area: Rankin Inlet, Gibson Lake Area

Name: Tella, S., Dr.

Geological Survey of Canada
Energy, Mines and Resources
601 Booth Street
Ottawa, Ontario
K1A 0E8

Tel: (613) 995-4926
Fax: (613) 995-7997

To map regional bedrock in the Rankin Inlet (55K) and Gibson Lake (55N) region. The objectives of the mapping are to upgrade reconnaissance work and to provide an improved tectonostratigraphic framework for mineral exploration.

Lower-Middle Devonian Stromatoporoids of Arctic Canada

Project: 155-92

Period: 12 June - 31 July

Area: Penny Strait, Truro Island, Dyke Ackland Bay, Lowther Island

Name: Stearn, Colin W.

Department of Geological Sciences
McGill University
3450 University Street
Montreal, Quebec
H3A 2A7

Tel: (514) 398-3590

Ongoing research has revealed the largest known Emsian (upper Lower Devonian) stromatoporoid fauna, from the Blue Fiord formation, Ellesmere Island; moreover, Blue Fiord stromatoporoids suggest novel correlations to midcontinent North America and Asia. We propose to extend systematic study of Arctic stromatoporoids to the Eifelian (L.M. Devonian) and Pragian (mid-Lower Devonian) stages. The latter proposal is significant in that Pragian stromatoporoids are unknown from North America; new data from Grinnell Peninsula suggest the rare presence of fossiliferous Pragian carbonates.

Phanerozoic Geology of Central Ellesmere Island **Project:** 35-76

Period: 14 June - 15 August

Area: Vendom Fiord and Strathcona Fiord Areas

Name: Harrison, J.C., Dr.

Geological Survey of Canada
Energy, Mines and Resources
3303 - 33rd Street NW
Calgary, Alberta
T2L 2A7

Tel: (403) 292-7137
Fax: (403) 292-5377

The research involves the completion of 1:250,000 scale Phanerozoic bedrock geological maps within the Vendom Fiord and Strathcona Fiord map areas (NTS 49D,49E), Ellesmere Island. Supported peripheral research will include detailed studies of lower Paleozoic stratigraphy and sedimentology, and Phanerozoic structure.

Geomorphology of the Limestone Massifs in the Yukon **Project:** 268-90

Period: 15-28 June

Area: Bear Cave, Yukon

Name: Lauriol, Bernard

Department of Geography
Ottawa University
165 Waller Street
Ottawa, Ontario
K1N 6N5

Tel: (613) 564-6591
Fax: (613) 564-3304

To continue the study of present day and fossil ice in the caves of northern Yukon in relation to climatic change and regional geomorphology.

A) **The Nature and Origin of Massive Ground Ice on Fosheim Peninsula**

B) **Perennial Springs and Frost Blisters at Expedition Fiord, Axel Heiberg Island**

Project: 165-87

Period: 15 June - 30 July

Area: Slidre River, Expedition Fiord, Eureka

Name: Pollard, Wayne, Dr.

Department of Geography
McGill University
805 Sherbrooke Street West
Montreal, Quebec
H3A 2K6

Tel: (514) 398-4454
Fax: (514) 398-7437

This project is concerned with the investigation of massive ground ice in the Canadian High Arctic. Current research focuses upon ice occurring on the Fosheim Peninsula, Ellesmere Island, and the Mokka Fiord area, Axel Heiberg Island. Detailed cryostratigraphic investigation of natural exposures, shallow coring and Ground Probing Radar surveys provide the basis for a better understanding of ice distribution and nature. Geochemical, isotopic and petrographic analyses provide the basis of interpretation of ice origin.

Eurekan Displacement Pattern

Project: 152-88

Period: 15 June - 14 August

Area: Axel Heiberg and Ellesmere Islands

Name: Schwerdtner, W. M.

Department of Geology
University of Toronto
22 Russell Street
Toronto, Ontario
M5S 3B1

Tel: (416) 978-3022
Fax: (416) 978-3938

Small-scale displacement lineations on slickensides and pebble surfaces as well as mineral fibres in evaporites are used to determine the movement direction and movement sense in large-scale fault zones. This technique is applied to determine the paths of tectonic transport in the Eureka Sound fold belt, eastern Arctic Archipelago.

Sedimentology, Diagenesis and Economic Potential of Devonian Sediments, Eastern Franklinian Miogeosyncline, Bathurst Island **Project:** 74-92

Period: 15 June - 15 August

Area: Byam Martin Island, Cameron Island, Helena Island, Stuart and Moses Rivers

Name: Brand, Uwe, Dr.

Department of Geological Sciences
Brock University
St. Catherines, Ontario
L2S 3A1

Tel: (416) 688-5550
Fax: (416) 682-9020

The project aims to define the complex facies and depositional environments of the Devonian rocks of Bathurst Island. This involves detailed sedimentological, diagenetic and paleoclimatologic studies of sections. Overall, an assessment will be made of the solid-liquid mineral potential of the Devonian strata of the Bathurst Island group.

Biostratigraphy of Lower Cambrian Strata, Ellesmere Island **Project:** 205-92

Period: 15 June - 15 August

Area: Bache Peninsula, Bay Fiord, Vendom Fiord, Makinson Inlet

Name: Pratt, Brian R., Dr.

Department of Geological Sciences
University of Saskatchewan
Saskatoon, Saskatchewan
S7N 0W0

Tel: (306) 966-5725
Fax: (306) 966-8593

The principal aims of the project are to establish biostratigraphic and lithostratigraphic characteristics of the Lower Cambrian shelf succession on Bache Peninsula and in the Strathcona Fiord, Vendom Fiord and Makinson Inlet areas of east central Ellesmere Island.

Resource Assessment, Wager Bay West of 92 degrees

Project: 58-91

Period: 15 June - 30 August

Area: Wager Bay, Brown River

Name: Jefferson, Charles W., Dr.

Geological Survey of Canada
Energy, Mines and Resources
601 Booth Street
Ottawa, Ontario
K1A 0E8

Tel: (613) 992-9862
Fax: (613) 996-9820

This mineral and energy resource assessment (MERA) involves 1:50,000 scale geological mapping, prospecting and geochemical sampling during 1991 and 1992. The area is the western end of the proposed Wager Bay national park, covering the headwaters of the Brown River system, known as the Laughland Lake area, which drains eastward into Wager Bay. This MERA is one of a number of studies (e.g. natural resource surveys, archaeology, etc.) being done to provide information for public consultations.

Paleoecology of Carboniferous Age Reefs, Sverdrup Basin

Project: 102-92

Period: 20 June - 15 August

Area: Otto Fiord

Name: Brunton, Frank R.

Department of Geological Sciences
Queen's University
Kingston, Ontario
K7L 3N6

Tel: (613) 564-5755
Fax: (613) 564-9916

A paleoecologic analysis of Pennsylvanian age (Late Carboniferous) bryozoan - crinoid - spar cement dominated reef mounds is planned. This study will allow for comparisons to be made with classical Mississippian age Waulsortian reef mounds in Belgium, Ireland, England and the USA. Their development in relation to regional tectonics and paleogeography will be examined in collaboration with Benoit Beauchamp's (Project 16-89) basin analysis study.

Minto Inlier, Victoria Island **Project:** 25-89

Period: 21 June - 9 August

Area: Glenelg Bay, Hadley Bay, Aston Bay

Name: Rainbird, Robert H.

Geological Survey of Canada
Energy, Mines and Resources
601 Booth Street
Ottawa, Ontario
K1A 0E8

Tel: (613) 943-2212
Fax: (613) 975-7997

To develop 1:50,000 scale geological mapping of Late Proterozoic sedimentary and volcanic rocks in the Minto Inlier, northern Victoria Island. Assessment of economic potential of sediment hosted stratiform base metals. Follow-up work on correlative strata in the Aston Bay area of Somerset Island.

Upper Paleozoic Basin Analysis of Sverdrup Basin **Project:** 16-89

Period: 22 June - 13 August

Area: Otto Fiord Area

Name: Beauchamp, Benoit, Dr.

Geological Survey of Canada
Energy, Mines and Resources
3303 - 33rd Street NW
Calgary, Alberta
T2L 2A7

Tel: (403) 292-7190
Fax: (403) 292-4961

To understand the Carboniferous and Permian stratigraphy of the Sverdrup Basin in Canada's High Arctic. The data gathered through this project will be useful for both oil and gas exploration and paleoenvironmental assessment.

Tertiary Forests of Axel Heiberg and Ellesmere Islands

Project: 21-90

Period: 24 June - 30 July

Area: Northeast Axel Heiberg Island, Strathcona Fiord

Name: Basinger, James F., Dr.

Department of Geological Sciences
University of Saskatchewan
Saskatoon, Saskatchewan
S7N 0W0

Tel: (306) 966-5687
Fax: (306) 966-8593

Fossil trees, preserved in growth position, occur in sediments of early Tertiary age (40 - 60 million years old) on Axel Heiberg and Ellesmere islands. Reconstruction of these ancient forests will improve our understanding of past environmental conditions in the very high latitudes. Accompanying fossilized leaf litter from the forest floors will augment this study by revealing the composition of the forests, permitting more direct comparison with modern vegetation.

Fossil Plants from the Early Tertiary

Project: 169-85

Period: 24 June - 30 July

Area: Northeast Axel Heiberg Island, Fosheim Peninsula

Name: Basinger, James F., Dr.

Department of Geological Sciences
University of Saskatchewan
Saskatoon, Saskatchewan
S7N 0W0

Tel: (306) 966-5687
Fax: (306) 966-8593

Exquisitely preserved fossil plants are found in early Tertiary (approximately 40 - 60 million years old) sediments on Axel Heiberg and Ellesmere islands. Fossil forests, the in-place remains of tree stumps and forest floor litter provide evidence for a once lush Arctic. From these remains, researchers are able to interpret past climatic conditions and the origins of some of the plants that make up our modern deciduous and northern forests.

Clastic-Carbonate Transitions in Lower Cambrian Strata of Ellesmere Island, Arctic Archipelago **Project:** 201-92

Period: 24 June - 31 July

Area: Vendom Fiord, Augusta Bay, Irene Bay, Makinson Inlet

Name: Long, Darrel G.F., Dr.

Department of Geology
Laurentian University
Sudbury, Ontario
P3E 2C6

Tel: (705) 675-1151 Ext. 2268
Fax: (705) 673-6058

Detailed lithological and sedimentological investigation of Lower Cambrian strata in central and southern Ellesmere Island will be used to provide a sequence stratigraphic framework for the early, syn-drift phase of evolution of the Franklinian basin. An attempt will be made to determine if coastal boundary currents, storm systems, or transverse bypass systems played a significant role in segregation of facies.

Wager Bay Park Proposal - Canadian Parks Service **Project:** 170-92

Period: 25 June - 30 July

Area: Wager Bay Area

Name: Seale, Elizabeth

Canadian Parks Service
Environment Canada
Box 1166
Yellowknife, Northwest Territories
X1A 2N8

Tel: (403) 873-8477
Fax: (403) 873-8185

This research towards development of a national park proposal includes the continuation of an archaeological survey begun in 1991 and the examination of visitor activity potential, important geological themes and park management issues.

Stratigraphy/Sedminentology of Borup Fiord Formation

Project: 234-92

Period: 25 June - 15 August

Area: Otto Fiord, Borup Fiord Areas

Name: Thériault, Pierre

University of Bergen
Geological Institute, Avd. A
Allegt. 41, 5007
Bergen, Norway

Tel: (47) 5-213438
Fax: (47) 5-315729

The project deals with identifying and describing the depositional sequences that characterize the Borup Fiord formation exposed on northern Ellesmere and Axel Heiberg islands. This will helps to establish a stratigraphic and paleogeographic framework for comparison with that of a similar unit present on Svalbard in the Norwegian Arctic in order to further reconstruct the sedimentary evolution of circum-Arctic regions for the carboniferous time interval.

Tectonomagmatic Evolution of the Sverdrup Basin and Arctic Continental Margin

Project: 122-92

Period: 26 June - 4 August

Area: Western and Northern Axel Heiberg Island

Name: Muecke, Gunter K., Dr.

Department of Geology
Dalhousie University
Halifax, Nova Scotia
B3H 3J5

Tel: (902) 494-6569
Fax: (902) 494-6889

To carry out volcanological, petrochemical, and geochronological investigations on the Cretaceous igneous rocks of western and northern Axel Heiberg Island. These studies are the continuation of a project to elucidate the role of magmatism in the formation of the Sverdrup Basin and the adjacent Arctic continental margin.

Paleoecology of Vertebrates from the Silurian and Devonian of the Canadian Arctic Islands

Project: 222-92

Period: 26 June - 12 August

Area: Port Leopold, Drake Bay, Willis Bay

Name: Elliott, D. K., Dr.

Department of Geology
Northern Arizona University
P.O. Box 6030
Flagstaff, Arizona
86011-6030 USA

Tel: (602) 523-7188
Fax: (602) 523-2626

Little is known of the paleobiology of aquatic early vertebrates from the Silurian and Devonian. These organisms are widespread in rocks of this age in Prince of Wales, Somerset, and Cornwallis islands where the Peel Sound Formation and its correlatives preserve environments ranging from fluvial to marine. Taphonomic studies of the vertebrates together with sedimentological analysis will be used to delineate the environments in which these organisms lived.

Stratigraphic-Structural Analysis and Compilation, Arctic Islands

Project: 119-90

Period: 27 June - 12 August

Area: Northern Ellesmere and Axel Heiberg Islands

Name: Trettin, H.P., Dr.

Geological Survey of Canada
Energy, Mines and Resources
3303 - 33rd Street NW
Calgary, Alberta
T2L 2A7

Tel: (403) 292-7130
Fax: (403) 292-5377

The purpose of the project is to map, describe, and interpret the Precambrian to Devonian rocks of northern Ellesmere and Axel Heiberg islands. The last phase of field work is to be carried out in 1992. The project also includes compilations of the geology of the Arctic Islands for the Geology of Canada series of volumes.

Research into the Sedimentary Geology of the Darling Peninsula, Ellesmere Island

Project: 200-92

Period: 27 June - 29 August

Area: Darling Peninsula, Ellesmere Island

Name: Craig, Lorraine E., Dr.

Cambridge Arctic Shelf Programme
West Building, Gravel Hill
Huntington Road, Cambridge
England CB3 ODJ

Tel: 011-44-223-277586
Fax: 011-44-223-276604

To assess the Paleozoic history of the Franklinian Basin; and to acquire stratigraphic, sedimentological and structural data to build a more complete picture of the facies sequences, depositional environments and paleogeography of the region.

Geology of Eclipse Trough, Bylot Island

Project: 54-86

Period: 28 June - 28 July

Area: Eclipse Trough on Southwest Bylot Island

Name: Burden, Elliott, Dr.

Department of Earth Sciences
Memorial University
St. John's, Newfoundland
A1B 3X5

Tel: (709) 737-8388
Fax: (709) 737-2589

Eclipse Trough on southwest Bylot Island and northern Baffin Island contains some of the best exposures of Cretaceous and Tertiary strata in the Canadian Arctic. These beds stand to figure prominently in future planning for a national park in this area and in hydrocarbon resource assessment in Lancaster Sound and Baffin Bay. This study is directed towards clarifying the sedimentology and geologic history of these rocks.

Palynology, Stratigraphy, Sedimentology of the Hassel Formation to Base of Eureka Sound Group, Sverdrup Basin

Project: 238-90

Period: 28 June - 30 July

Area: Strathcona Fiord, Eureka Sound, Cañon Fiord, Kanguk Peninsula

Name: Hills, L.V., Dr.

Department of Geology
and Geophysics
University of Calgary
2500 University Drive N.W.
Calgary, Alberta
T2N 1N4

Tel: (403) 220-5848
Fax: (403) 284-0074

The purpose is to investigate the stratigraphic and age relationships and depositional environments of the Hassel to Kanguk (base of Eureka Sound Group) Formation. This is a poorly known interval and recent work suggests that contacts between the Hassel - Bastion Ridge and Hassel - Kanguk formations and Bastion Ridge - Kanguk Formation are unconformable. Detailed section measurement will be conducted and sampling for palynological analysis will be used to determine the stratigraphic and age relationships of the formation throughout the Sverdrup Basin.

Quaternary Geology of the Coastal Plain of the Beaufort Sea

Project: 4-88

Period: 29 June - 10 July

Area: Morgan Bluffs, Banks Island

Name: Vincent, J.S., Dr.

Geological Survey of Canada
Energy, Mines and Resources
601 Booth Street
Ottawa, Ontario
K1A 0E8

Tel: (613) 995-4983
Fax: (613) 992-0190

A detailed paleomagnetic study of various glacial and non-glacial sediments in the Morgan Bluffs along the coast of Banks Island will be completed. These data along with those already obtained for the sequence exposed at Worth Point, Duck Hawk and to the east of the Nelson River will make it possible to confirm or revise lithostratigraphic correlations already proposed and to establish, on a solid basis, the chronostratigraphy of the longest series of quaternary deposits in Arctic Canada.

Transportation Corridors in the NWT **Project:** 280-91

Period: 1-31 July

Area: Slave Province Area

Name: Patterson, George, Dr.

Energy, Mines and Petroleum
Government of the NWT
Box 1320
Yellowknife, Northwest Territories
X1A 2L9

Tel: (403) 873-7096
Fax: (403) 873-0254

A study of the geology, mineral showings and mineral potential of proposed transportation corridors in the Slave Province.

Sedimentology of Upper Permian Carbonates in West-Central Ellesmere Island Project: 192-92

Period: 1 July - 3 August

Area: West-Central Ellesmere Island, Otto Fiord Area

Name: Desrochers, André, Dr.

Department of Geology
University of Ottawa
Ottawa, Ontario
K1N 6N5

Tel: (613) 564-6571
Fax: (613) 564-7681

The Upper Permian Degerbols Formation is superbly exposed in west-central Ellesmere Island and represents one of a few areas in the world where an ancient, non-tropical carbonate sequence displays continuous outcrop showing lateral facies changes from inner shelf to outer shelf over several tens of kilometers and steeply dipping clinoforms making the platform to basin transition. The present study will explain the origin of these carbonates in the Sverdrup Basin.

Quaternary Geology, Northern Slave Structural Province

Project: 206-92

Period: 1 July - 25 August

Area: Coronation Gulf Area

Name: Dilabio, R.

Geological Survey of Canada
Energy, Mines and Resources
601 Booth Street
Ottawa, Ontario
K1A 0E8

Tel: (613) 992-1380
Fax: (613) 992-2468

Surficial geology of NTS 76M will be completed by compilation of existing mapping and by new mapping. Geochemical, mineralogical, and lithological analyses of till will be done to produce maps of regional variations in drift composition, provenance, and patterns of dispersal.

Uranium-Lead Geochronology of the Northern Torngat Orogen

Project: 208-92

Period: 1 July - 30 August

Area: Iselin Harbour, Labrador

Name: Scott, Dave J.

GEOTOP
Université du Québec à Montréal
P. O. Box 8888, Station A
Montreal, Quebec
H3C 3P8

Tel: (514) 987-4080
Fax: (514) 987-3635

Uranium-lead geochronology of the northern Torngat Orogen is a component of the larger Torngat multidisciplinary program, aimed at improving understanding of the northern Labrador/Quebec Peninsula and its correlations with the eastern Arctic.

Project Torngat **Project:** 193-92

Period: 1 July - 30 August

Area: Iselin Harbour, Labrador

Name: Van Kranendonk, Martin J.

Geological Survey of Canada
Energy, Mines and Resources
601 Booth Street
Ottawa, Ontario
K1A 0E8

Tel: (613) 943-8883
Fax: (613) 995-9273

150,000 scale geological mapping of the northern Torngat Orogen (ca. 1.8 Ga) in northern Labrador and northeastern Quebec, is aimed at providing a detailed resource base for exploration and for investigating the Archean to Early Proterozoic tectonic evolution of this region. In particular, structural analysis, metamorphic petrology and geochronology will be applied to that area where the Komaktorvik and Abloviak zones of the Torngat Orogen splay around the Burwell terrane.

Torngat Project **Project:** 70-92

Period: 1 July - 31 August

Area: Iselin Harbour, Labrador

Name: Wardle, Richard

Geological Survey Branch
Newfoundland Department of
Mines and Energy
95 Bonaventure Avenue
P. O. Box 8700
St. John's, Newfoundland
A1B 4J6

Tel: (709) 729-2107
Fax: (709) 729-3493

The Torngat project is a multidisciplinary, multi-agency geoscience undertaking directed at improving our understanding of the northern Labrador/Quebec peninsula and its correlations with the eastern Arctic. The primary thrusts of the project are bedrock and Quaternary mapping. The project is being run cooperatively by the Geological Survey of Canada and the Newfoundland Geological Survey in conjunction with various university groups.

Reef Studies in the Silurian, Canadian Arctic Islands

Project: 14-73

Period: 2 July - 12 August

Area: Goose Fiord, Hell Gate, Colin Archer Peninsula, Dragleybeck Inlet

Name: Dixon, O.A., Dr.

Department of Geology
University of Ottawa
Ottawa, Ontario
K1N 6N5

Tel: (613) 564-5751
Fax: (613) 564-9916

Reefs of diverse types occur in the Canadian Arctic in Silurian sedimentary sequences representing shelf-to-slope depositional environments. The nature and occurrence of these structures and closely associated rocks provide information that helps to interpret the sedimentary, tectonic and paleogeographic history of the region.

Methods and Problems of Drift Prospecting

Project: 250-90

Period: 6 July - 7 August

Area: Katiktok Lake, Milne Inlet

Name: Parent, Michel

Geological Survey of Canada
Energy, Mines and Resources
2700 Einstein, P. O. Box 7500
Sainte-Foy, Quebec
G1V 4C7

Tel: (418) 654-2657
Fax: (418) 654-2615

This project is a multiscale study of glacially-transported precambrian rocks in tills resting on a paleozoic platform.

Upper Paleozoic-Triassic Stratigraphy and Sedimentology, Northern Yukon and Adjacent Northwest Territories

Project: 3-92

Period: 6-13 July

Area: Malcolm River

Name: Dixon, J.

Geological Survey of Canada
Energy, Mines and Resources
3303 - 33rd Street NW
Calgary, Alberta
T2L 2A7

Tel: (403) 292-7136
Fax: (403) 292-5377

To describe the stratigraphy and interpret the sedimentology of Upper Paleozoic and Triassic rocks of the Northern Yukon and adjacent Northwest Territories; to relate the stratigraphy to tectonics, compare with other Arctic areas and to evaluate the economic potential of the strata.

Silurian Graptolites of Arctic Islands

Project: 141-81

Period: 7-24 July

Area: Baumann and Vendom Fiords

Name: Lenz, Alfred C., Dr.

Department of Geology
University of Western Ontario
London, Ontario
N6A 5B7

Tel: (519) 661-3195
Fax: (519) 661-3292

The program entails the study of the biostratigraphy, taxonomy and evolution of graptolites of the Arctic Islands. Of special interest are Wenlock to Lower Devonian graptolites, and particularly those across the Wenlock-Ludlow boundary, a time of biological "crisis".

Early Quaternary and Late Tertiary Geology and Geomorphology - Arctic Islands **Project:** 19-89

Period: 7-24 July

Area: Vendom Fiord, Strathcona Fiord, Ellesmere Island

Name: Fyles, John G., Dr.

Geological Survey of Canada
Energy, Mines and Resources
401 Lebreton Street
Ottawa, Ontario
K1A 0E8

Tel: (613) 992-5081
Fax: (613) 992-2468

To describe and explain the stratigraphy, geomorphology, tectonic setting and geological history of the Beaufort formation, of stratigraphically equivalent and younger late Tertiary deposits, and of associated "old" Quaternary deposits and landforms; and to investigate the landscape evolution subsequent to accumulation of the Beaufort Formation.

Ordovician and Silurian Trilobite Faunas of the Canadian Arctic **Project:** 138-90

Period: 7 July - 4 August

Area: Baumann Fiord, Hoved and Baillie-Hamilton Islands, Abbott River, Twilight Creek

Name: Chatterton, Brian D., Dr.

Department of Geology
University of Alberta
Edmonton, Alberta
T6G 2E3

Tel: (403) 492-3265
Fax: (403) 492-2030

This project seeks to describe as many Ordovician and Silurian trilobite faunas from Arctic Canada as is feasible. Trilobites from this time and region were previously virtually unknown. During the first year of this project, more than 150 new species were recovered. Research is focussed on Cornwallis, Baillie-Hamilton, and southern Ellesmere islands.

Ordovician and Lower Silurian Graptolite Biostratigraphy, Hazen Formation, Cañon Fiord Area, Ellesmere Island

Project: 168-91

Period: 10-31 July

Area: Caledonian Bay

Name: Melchin, Michael J., Dr.

Department of Geology
Saint Francis Xavier University
Antigonish, Nova Scotia
B2G 1C0

Tel: (902) 867-5177
Fax: (902) 867-5153

This project will document and describe the stratigraphy and graptolite faunas of the Hazen Formation. It will add to the body of stratigraphic and biostratigraphic data necessary to understand the geological history of the Arctic Islands. It will also provide a basis for testing the factors that control graptolite paleoecology and paleobiogeography, and, with future work, the paleogeographic relationships between the various tectonostratigraphic units of Ellesmere Island.

Littoral and Morpho-Sedimentary Dynamic, Canadian Beaufort Coast

Project: 297-91

Period: 10 July - 30 August

Area: Drift Point, Tuktoyaktuk Peninsula

Name: Héquette, Arnaud

Department of Geography
Université Laval
Ste-Foy, Quebec
G1K 7P4

Tel: (418) 656-2363
Fax: (418) 656-2019

The purpose of this project is to develop an evolution model of the littoral zone around the southeast coast of the Canadian Beaufort Sea taking into account: 1) geomorphic and sedimentary processes, 2) geomorphic and sedimentary dynamic variations in the foreshore and along the inner part of the continental platform, and 3) variations of relative sea level. Field work will include the measurements of coastal retreat, the sampling of littoral and sub-littoral sediments, geophysical surveys in shallow water (high resolution reflection seismic, bathymetry and sidescan sonar), the use of current meters in the littoral zone, and coring in lagoons and on the sandspits and bars of the foreshore.

Research on Mineral Deposits of the Slave Structural Province **Project:** 151-83

Period: 12 July - 15 August

Area: George Lake, Jackson Camp, Acasta River

Name: Padgham, W. A., Dr.

Northern Affairs Program
Indian and Northern Affairs
P.O. Box 1500
Yellowknife, Northwest Territories
X1A 2R3

Tel: (403) 920-8211
Fax: (403) 873-5763

To research mineral deposits of the Slave structural province concentrating on gold deposits and in particular iron formation hosted deposits. Tectonic structural and metamorphic history of the Slave is also under investigation.

Precambrian Geology of the Boothia Uplift **Project:** 167-92

Period: 13 July - 13 August

Area: East Coast Prince of Wales Island, Northwest Somerset Island

Name: Frisch, T., Dr.

Geological Survey of Canada
Energy, Mines and Resources
601 Booth Street
Ottawa, Ontario
K1A 0E8

Tel: (613) 943-8884
Fax: (613) 995-9273

The Boothia Uplift is a 800-kilometre long north-trending salient of the Precambrian Shield flanked by Paleozoic strata, which was most active tectonically in Siluro-Devonian time. Building on work in the Shield terrane of Boothia Peninsula and Somerset Island in 1986, 1987 and 1990, investigation of the tectonically complex western margin of the uplift, well exposed on eastern Prince of Wales Island, is proposed for 1992.

Coal Resource Potential, Tertiary Coals Eureka Sound Group, Arctic Islands

Project: 2-90

Period: 15 July - 5 August

Area: Vendom Fiord, Strand Fiord

Name: Richardson, R.

Alberta Geological Survey
Alberta Research Council
P.O. Box 833, Station F
Edmonton, Alberta
T6H 5X2

Tel: (403) 438-7623
Fax: (403) 438-3364

The coal resource potential of the Tertiary coals of the Eureka Sound group in the Arctic Islands will be examined. In addition to resource estimation (quantities), the potential for development and associated environmental problems will be explored.

3-D Architecture of Transcurrent Shear Zone, Torngat Orogen

Project: 269-92

Period: 20 July - 20 August

Area: Iselin Harbour

Name: Rivers, Toby

Department of Earth Sciences
Memorial University
St. John's, Newfoundland
A1B 3X5

Tel: (709) 737-8392
Fax: (709) 737-2589

To determine the three-dimensional architecture of a deep crustal-scale transcurrent shear zone, using structural mapping and geothermobarometry to estimate the pressure-temperature-strain rate path of rocks within the shear zone in comparison to those outside.

Palaeoenvironmental Change of Southern Axel Heiberg Island

Project: 103-91

Period: 26 July - 30 August

Area: Glacier Fiord, Axel Heiberg Island

Name: Evans, David J.A., Dr.

Department of Geography and Topographic Science
University of Glasgow
Glasgow, Scotland
United Kingdom
G12 8QQ

Tel: (041) 339-8855 Ext. 4786
Fax: (041) 330-4894

To map and date glacier limits during previous glaciations and the Holocene. To reconstructe sea level change and sea-ice fluctuations throughout the late Quaternary and Holocene. To analyze subpolar glacial geology through the study of contemporary systems and ancient geomorphology.

Lithogeochemistry and Geochronology of the Mugford Group

Project: 289-92

Period: 1-15 August

Area: Grimmington Island

Name: Hamilton, M.A.

Geological Survey of Canada
Energy, Mines and Resources
601 Booth Street
Ottawa, Ontario
K1A 0E8

Tel: (613) 995-43o4
Fax: (613) 995-7322

To systematically map, sample and analyze volcanic and sedimentary rocks of the Mugford, Ramah and Snyder Groups, coastal Labrador. To prepare stratigraphic sections and perform high-precision major and trace element and isotopic analyses to determine ages, tectonic settings and economic potential.

Surficial Geology, Geomorphology and Terrain Inventory of the Central and Western Queen Elizabeth Islands

Project: 88-76

Period: 1-20 August

Area: Mould Bay Area

Name: Hodgson, D.A., Dr.

Geological Survey of Canada
Energy, Mines and Resources
601 Booth Street
Ottawa, Ontario
K1A 0E8

Tel: (613) 992-0645
Fax: (613) 992-2468

To map, describe and explain surficial materials, Quaternary stratigraphy, sea level changes and the process of delevelling, and active and inactive geomorphic processes on Prince Patrick Island and adjacent islands to the northeast.

Reconstruction of Holocene Environments

Project: 281-90

Period: 1-30 August

Area: Mountain River, Eskimo lake

Name: Bégin, Christian

Quebec Geoscience Center
Energy, Mines and Resources
2700 Einstein, P. O. Box 7500
Sainte-Foy, Québec
G1V 4C7

Tel: (418) 654-2673
Fax: (418) 654-2615

A study is being undertaken along the Mackenzie valley of geomorphic and ecologic processes which are climate dependant to determine the recent climatic fluctuation trends which are being perceived over the whole planet. The study of phenomena such as the reactivation of eolian activity, the aggradation or degradation of permafrost, and mass movement and fluctuation of the treeline, will allow the reconstruction of environmental changes which have occurred in the region. By studying the relationship between these phenomena and climate, this work will contribute, in a significant manner to the Global Change Program of the Geological Survey of Canada.

High Arctic Periglacial Processes and Related Quaternary History

Project: 129-79

Period: 1 August - 14 September

Area: Resolute Bay

Name: Washburn, A. L., Dr.

Quaternary Research Center
University of Washington
AK-60
Seattle, Washington
98195 USA

Tel: (206) 646-3810
Fax: (206) 543-8140

The project is a multiyear study of High Arctic periglacial processes, especially frost creep, gelifluction, and patterned-ground research. Project field emphasis is on checking site characteristics where instrumental observations have been terminated, and on reviewing other field relationships. Present overall priority is on preparation of two comprehensive manuscripts for publication - the first, on patterned ground, is nearing completion; the second, on gelifluction and frost creep, based on theodolite measurements over a nine-year period, is still in the data reduction stage.

Frobisher's "Gold" in Eastern Baffin Island: Mines and Minerals

Project: 145-91

Period: 2-15 August

Area: Lefferts Island and Resolution Island Areas

Name: Hogarth, Donald D.

Department of Geology
University of Ottawa
Ottawa, Ontario
K1N 6N5

Tel: (613) 564-4003
Fax: (613) 564-9916

Investigation will be made of "Sussex Island" and "Queens Foreland" mines worked by Martin Frobisher in 1578. "Sussex Island" was rediscovered in 1991 and "Queens Foreland" can now be approximately pinpointed. Geological, petrochemical and mineralogical studies of Frobisher's "black ores" and associated rocks will be conducted.

Late Quaternary Marine Mollusc Assemblages and Paleoceanography
Queen Elizabeth Islands

Project: 228-92

Period: 10-30 August

Area: Cañon Fiord, Ellesmere Island

Name: Aitken, Alex Edison, Dr.

Department of Geography
Scarborough Campus
University of Toronto
1265 Military Trail
Scarborough, Ontario
M1C 1A4

Tel: (416) 287-7309
Fax: (416) 287-7283

To produce an integrated picture of Late Quaternary environmental change in the northernmost Queen Elizabeth Islands, NWT, through the combined study of glacial and marine sediments and their associated body fossil assemblages. The fossils are useful in inferring the paleoceanography of the region and rates of sedimentation recorded in sedimentary deposits.

[illegible] Geomorphology within Canadian [illegible] Islands

Project: 131-92

Period: 11-31 August

Area: Mould Bay, Isachsen, Radstock Bay, Resolute

Name: Taylor, R.B.

Geological Survey of Canada
Energy, Mines and Resources
P.O. Box 1006
Dartmouth, Nova Scotia
B2Y 4A2

Tel: (902) 426-7736
Fax: (902) 426-4104

To resurvey coastal monitoring stations on Devon, Bathurst, Lowther Islands established in the 1970s for the purpose of determining longterm shoreline change. To extend surveys of large paleo-shore ridges observed in 1990 along the Arctic Ocean with sampling and echo-sounding gear.

Surficial Geology — Beaufort Continental Shelf **Project:** 110-77

Period: 30 August - 20 September

Area: Tuktoyaktuk Area, Beaufort Shelf

Name: Blasco, Steve, Dr.

Geological Survey of Canada
Energy, Mines and Resources
P.O. Box 1006
Dartmouth, Nova Scotia
B2Y 4A2

Tel: (902) 426-3932
Fax: (902) 426-4104

Using seismic reflection profiling equipment mounted onboard a ship, map the surficial sediments to establish a stratigraphic framework of the Quaternary deposits of the shelf. Using echo sounders and sidescan sonar equipment, remap sectors of the seabed to identify new ice scouring events. These new scour data are used to develop models of events on the Beaufort Shelf.

GEOPHYSICS

Permafrost Geophysics Project:

Period: 15 March - 15 April

Area: Tuktoyaktuk Area

Name: Hunter, J.A., Dr.

Tel: (613) 992-2560
Fax: (613) 992-2468

This project develops and tests geophysical techniques for mapping the occurrence and geophysical properties of subseabottom and terrestrial permafrost. Demonstration surveys are carried out in conjunction with surficial geology studies. Most programs are conducted in the Beaufort Sea - Mackenzie Delta of the western Arctic.

Geothermal Studies in Northern Canada Project: 15-73

Period: 20 March - 26 August

Area: Tuktoyaktuk, Resolute Bay, Pond Inlet Area

Name: Judge, Alan, Dr.

Geological Survey of Canada
Energy, Mines and Resources
601 Booth Street
Ottawa, Ontario
K1A 0E8

Tel: (613) 996-9323
Fax: (613) 992-2468

1) To remeasure deep and shallow geothermal sites in the Arctic Islands and Mackenzie Delta.
2) To retrieve instruments and place additional data loggers to study climate change impacts.
3) To collect data from associated automatic weather stations to study energy exchange in the north.
4) To conduct supporting shallow geothermal and geophysical investigations.
5) To conduct joint research with Russia colleagues under bilateral exchange agreement.

The Application of Electromagnetic Geophysical Techniques to Permafrost Research

Project: 20-91

Period: 1-15 April

Region: Iqaluit, northern Ungava region, Tuktoyaktuk

Name: Pilon, J.A.

Geological Survey of Canada
Energy, Mines and Resources
601 Booth Street
Ottawa, Ontario
K1A 0E8

Tel: (613) 996-9315
Fax: (613) 992-2468

To develop, demonstrate, evaluate and conduct tests on electromagnetic geophysical techniques for the study of the regional extent of permafrost and its physical characteristics, such as the presence or absence of massive ice, its salinity, the presence or absence of talik and the delineation and extent of unfrozen zones to furnish a broad spectrum of research techniques in examining the properties of permafrost.

Pressure Ridge Ice Scour Experiment (PRISE)

Project: 258-91

Period: 1 April - 10 May

Area: Tuktoyaktuk

Name: Dyke, Monty

Centre for Cold Ocean
Resources Engineering
Memorial University
St. John's, Newfoundland
A1B 3X5

Tel: (709) 737-8354
Fax: (709) 737-4706

The Pressure Ridge Ice Scour Experiment is directed at resolving pipeline loads through empirical measurement and modelling of soil stresses and deformations caused by scouring ice keels. The Extreme Gouge Depth Program is directed at resolving the ages of scours/gouges to determine the recurrence rate of extreme events.

Aeromagnetic Survey **Project:** 266-90

Period: 2-20 April

Area: Resolute Bay

Name: Hardwick, C.D., Dr.

Institute for Aerospace Research
National Research Council
Building U-61, Montreal Road
Ottawa, Ontario
K1A 0R6

Tel: (613) 998-3525
Fax: (613) 952-1704

To conduct aeromagnetic mapping of the Arctic continental margin for the departments of Energy, Mines and Resources and National Defence using NRC's Convair 580 aircraft. This campaign is part of an ongoing project started in 1989. The survey will cover an area from 79°N to 83°N and 96°W to 102°W.

Gravity of Barrow and Penny Straits and Wellington and Queens Channels **Project:** 8-73

Period: 24-28 April

Area: Resolute Bay

Name: Cooper, Roy

Geological Survey of Canada
Energy, Mines and Resources
1 Observatory Crescent
Building No. 2
Ottawa, Ontario
K1A 0Y3

Tel: (613) 992-6949
Fax: (613) 952-8987

As part of Geological Survey of Canada's program to map and explain the regional geological and tectonic framework of Canada's landmass and offshore, to carry out a regional gravity and bathymetric survey in Barrow and Penny straits and Wellington and Queens channels.

South Ellesmere Gravity Transects **Project:** 72-92

Period: 27 April - 15 June

Area: South Ellesmere Island

Name: Brown, Robert James, Dr.

Department of Geology
and Geophysics
University of Calgary
Calgary, Alberta
T2N 1N4

Tel: (403) 220-7484
Fax: (403) 284-0074

To measure the bouguer anomaly along transects through Makinson Inlet and Vendom Fiord on Ellesmere Island. The principal transect along Makinson Inlet will give a complete outlook from deep inside the Inglefield Uplift (named the Bache Peninsula Arch) to the central Ellesmere fold belt formations of the eastern border from Vendom Fiord. Previous seismic data and structural mapping will be used to correlate the models.

Upgrade of Magnetic and Seismic Observatory **Project:** 13-91

Period: 6-20 May

Area: Mould Bay Weather Station

Name: Newitt, L.R.

Geological Survey of Canada
Energy, Mines and Resources
1 Observatory Crescent
Ottawa, Ontario
K1A 0Y3

Tel: (613) 837-7915
Fax: (613) 824-9803

To replace existing magnetic observatory equipment at Mould Bay with newly developed CANMOS equipment which will allow satellite transmission of data to Ottawa and other locations around the world as part of the INTERMAGNETIC networks. To install new satellite-based broadband seismograph station to allow transmission of real time data to analysis centers in Ottawa and Sydney.

1992 Marine High Resolution Geophysical Survey **Project:** 210-91

Period: 28 July - 12 August

Area: Beaufort Sea-Mackenzie Delta Area

Name: Gowan, Robert J.

Natural Resources
Indian and Northern Affairs
10 Wellington Street, 6th Floor
Les Terrasses de la Chaudière
Hull, Quebec
K1A 0H4

Tel: (819) 994-7464
Fax: (819) 997-1587

To obtain both regional and site specific marine high-resolution survey information on the location, type, quantity and quality of granular deposits in the Beaufort Sea in support of the Department of Indian and Northern Affairs' responsibility for granular resources inventory and management. Inventory is required to develop resource conservation and effective utilization strategies and policies.

GLACIOLOGY

Trace Organic Contaminants in the Arctic Aquatic System **Project:** 6-86

Period: 1 March - 14 July

Area: Mould Bay, Eureka, Agassiz Ice Cap, Amituk Lake

Name: Gregor, D.J., Dr.

National Water Research Institute
Environment Canada
P. O. Box 5050
867 Lakeshore Road
Burlington, Ontario
L7R 4A6

Tel: (416) 336-4611
Fax: (416) 336-6430

A number of activities will be undertaken to further the knowledge of trace organic contaminants in the Arctic. These will include continued snowpack sampling of eight High Arctic sites, continued reconnaissance of Agassiz Ice Cap, servicing and sample collection from two snow collectors operated throughout the winter at Eureka and Mould Bay, establishment of an intensive study basin on east Cornwallis Island and preparation of samples at Resolute.

Thaw Depth Monitoring, Mackenzie Valley **Project:** 181-91

Period: 10 March - 15 August

Area: Fort Simpson, NWT, to the Arctic coast

Name: Nixon, Mark F.

Geological Survey of Canada
Energy, Mines and Resources
601 Booth Street
Ottawa, Ontario
K1A 0E8

Tel: (613) 992-2469
Fax: (613) 992-2468

A network of thaw depth monitoring sites is being established from Fort Simpson to the Arctic coast. To collect baseline information about this climatically controlled parameter and to monitor change over time. The work will include survey of installed sites north of Norman Wells and new installations from Fort Simpson to Norman Wells.

Glacier Research in the Queen Elizabeth Islands **Project:** 10-73

Period: 10 April - 12 May

Area: Meighen, Melville, Devon Islands and Agassiz Ice Cap

Name: Koerner, Roy, Dr.

Geological Survey of Canada
Energy, Mines and Resources
601 Booth Street
Ottawa, Ontario
K1A 0E8

Tel: (613) 996-7623
Fax: (613) 996-9990

To measure mass balance on Meighen, Melville, Devon and Northern Ellesmere ice caps for climate monitoring; to test a new GSC electro-mechanical drill on Agassiz Ice Cap and collect samples for paleoclimate studies; to collect snow samples for pollen analysis for environmental monitoring; to introduce two St. Petersburg Arctic and Antarctic Institute scientists to Canadian field glaciology; and to collect snow samples for Atmospheric Environment Service, Dalhousie University and the University of Stockholm.

Physico-Chemical Processes of Gaseous Exchanges Project: 82-90

Period: 1-31 May

Region: Agassiz Ice Cap, Ellesmere Island

Name: Jones, H.G., Dr.

Institut national de la
recherche scientifique
Université du Québec
P. O Box 7500
2700 Einstein Street
Sainte-Foy, Quebec
G1V 4C7

Tel: (418) 654-2533
Fax: (418) 654-2562

This project will attempt to measure the influence of snow cover in the Arctic on the composition of the atmosphere a part of global studies on the longterm physico-chemical evolution of the atmosphere and the effects of these changes on the earth's global climate. More precisely, the project will attempt to determine the dynamic and the mechanism of physico-chemical exchanges between snow cover and the atmosphere. A series of experiments will be undertaken on the composition of the atmosphere (HNO_3, O_3, NO_2) and the physico-chemical evolution of snow (NO_3, H_2O_2) in a controlled environment, i.e. snow with or without contact with ambient air and wind, and exposed or not to solar radiation.

Mass Balance of White and Baby Glaciers and Lake Ice Investigations

Project: 123-83

Period: 15-29 May

Area: Colour Lake, Expedition Fiord, Axel Heiberg Island

Name: Adams, Peter W.

Department of Geography
Trent University
P.O. Box 4800
Peterborough, Ontario
K9J 7B8

Tel: (705) 748-1440
Fax: (705) 748-1246

To study processes of accumulation and ablation on the mass balance of Baby and White glaciers; to study the role of ice cover on the hydrology and chemistry of Colour Lake, and to recover climate data from an automatic station near the lake. Preliminary measurements of sulfur springs output will be conducted.

A) **The Nature and Origin of Massive Ground Ice on Fosheim Peninsula**
B) **Perennial Springs and Frost Blisters at Expedition Fiord, Axel Heiberg Island**

Project: 165-87

Period: 15 June - 30 July

Area: Slidre River, Expedition Fiord, Eureka

Name: Pollard, Wayne, Dr.

Department of Geography
McGill University
805 Sherbrooke Street West
Montreal, Quebec
H3A 2K6

Tel: (514) 398-4454
Fax: (514) 398-7437

This project is concerned with the investigation of massive ground ice in the Canadian High Arctic. Current research focuses upon ice occurring on the Fosheim Peninsula, Ellesmere Island and the Mokka Fiord area, Axel Heiberg Island. Detailed cryostratigraphic investigation of natural exposures, shallow coring and Ground Probing Radar surveys provide the basis for a better understanding of ice distribution and nature. Geochemical, isotopic and petrographic analyses provide the basis of interpretation of ice origin.

Palaeoenvironmental Change of Southern Axel Heiberg Island

Project: 103-91

Period: 26 July - 30 August

Area: Glacier Fiord, Axel Heiberg Island

Name: Evans, David J.A., Dr.

Department of Geography
and Topographic Science
University of Glasgow
Glasgow, Scotland
G12 8QQ UK

Tel: (041) 339-8855 Ext. 4786
Fax: (041) 330-4894

To map and date glacier limits during previous glaciations and the Holocene. To reconstruct sea level change and sea-ice fluctuations throughout the late Quaternary and Holocene. To analyze subpolar glacial geology through the study of contemporary systems and ancient geomorphology.

HYDROGRAPHY

Trace Organic Contaminants in the Arctic Aquatic System **Project:** 6-86

Period: 1 March - 14 July

Area: Mould Bay, Eureka, Agassiz Ice Cap, Amituk Lake

Name: Gregor, D.J., Dr.

National Water Research Institute
Environment Canada
P. O. Box 5050
867 Lakeshore Road
Burlington, Ontario
L7R 4A6

Tel: (416) 336-4611
Fax: (416) 336-6430

A number of activities will be undertaken to further the knowledge of trace organic contaminants in the Arctic. These will include continued snowpack sampling of eight High Arctic sites, continued reconnaissance of Agassiz Ice Cap, servicing and sample collection from two snow collectors operated throughout the winter at Eureka and Mould Bay, establishment of an intensive study basin on east Cornwallis Island and preparation of samples at Resolute.

Hydrological Studies - Mackenzie Delta Area **Project:** 130-84

Period: 15 April - 10 September

Area: Inuvik, Trail Valley Creek

Name: Marsh, Phillip, Dr.

National Hydrology
Research Institute
Environment Canada
11 Innovation Boulevard
Saskatoon, Saskatchewan
S7N 3H5

Tel: (306) 975-5752
Fax: (306) 975-5143

This study is aimed at improving the understanding of processes controlling the accumulation, sublimation, metamorphism and melt of snow in northern environments, and the related hydrogeochemical fluxes. This work has implications for predicting snowmelt floods, global change, and the flux of nutrients and pollutants through northern ecosystems.

Physico-Chemical Processes of Gaseous Exchanges **Project:** 82-90

Period: 1-31 May

Region: Agassiz Ice Cap, Ellesmere Island

Name: Jones, H.G., Dr.

Institut national de la
recherche scientifique
Université du Québec
P. O. Box 7500
2700 Einstein Street
Sainte-Foy, Québec
G1V 4C7

Tel: (418) 654-2533
Fax: (418) 654-2562

This project will attempt to measure the influence of snow cover in the Arctic on the composition of the atmosphere a part of global studies on the longterm physico-chemical evolution of the atmosphere and the effects of these changes on the earth's global climate. More precisely, the project will attempt to determine the dynamic and the mechanism of physico-chemical exchanges between snow cover and the atmosphere. A series of experiments will be undertaken on the composition of the atmosphere (HNO_3, O_3, NO_2) and the physico-chemical evolution of snow (NO_3, H_2O_2) in a controlled environment, i.e. snow with or without contact with ambient air and wind, and exposed or not to solar radiation.

Hydrological Processes in Permafrost Terrain for Global Change Prediction **Project:** 53-73

Period: 1 May - 30 June

Area: Hot Weather Creek, Ellesmere Island

Name: Woo, Ming-ko, Dr.

Department of Geography
McMaster University
1280 Main Street West
Hamilton, Ontario
L8S 4K1

Tel: (416) 525-9140 Ext. 3526
Fax: (416) 546-0463

Hydrological processes respond directly to climatic variables which are likely to undergo changes as a result of the greenhouse effect. This project will 1) study the present-day hydrological activities as they affect the permafrost environment, and 2) investigate the effects of climatic change on the magnitude and timing of hydrological processes so as to provide a basis for predicting global change.

Paleoclimatic Studies of Lake Sediments from the High Arctic

Project: 136-88

Period: 1 May - 12 August

Area: Taconite Inlet, northern Ellesmere Island

Name: Bradley, Raymond S., Dr.

Department of Geology
and Geography
Morrill Science Center
University of Massachusetts
Amherst, Massachusetts
01003 USA

Tel: (413) 545-2794
Fax: (413) 545-1200

Meteorological, hydrological, limnological and sedimentological studies are being carried out in two coastal lake basins on northern Ellesmere Island. The lakes contain laminated sediments which may contain a year-by-year record of climatic variations over the last few hundred to a few thousand years. The objective of the study is to understand the relationship between climate, runoff, sediment flux and contemporary limnological processes today, so as to have a better basis for understanding the sedimentary record of the past.

Hydrology and Chemistry of Terrestrial Drainage and Groundwater in the High Arctic

Project: 288-90

Period: 11 May - 30 August

Area: Colour Lake, Axel Heiberg Island

Name: English, Michael C., Dr.

Department of Geography
Wilfrid Laurier University
75 University Avenue West
Waterloo, Ontario
N2L 3C5

Tel: (519) 884-1970 Ext. 2159
Fax: (519) 884-8853

This research focusses on the Expedition Fiord area of Axel Heiberg Island, NWT. The research is directed towards understanding: 1) the hydrological/chemical change in terrestrial runoff as active layer increases in depth from spring to fall, 2) quantifying the proportional contribution of groundwater and glacial water of Expedition River during spring, summer and early fall, and 3) hydrological and chemical characteristics of groundwater in the Colour Lake catchment.

Hydrology of Snow-Filled Arctic Stream Valleys **Project:** 163-89

Period: 1 June - 21 July

Area: Resolute Bay Area

Name: Heron, Richard, Dr.

Department of Geography
University of Windsor
Windsor, Ontario
N9B 3P4

Tel: (519) 253-4232 Ext. 2181
Fax: (519) 973-7050

In the spring, many Arctic streams are blocked by snowdrifts and meltwater is impounded behind them. This project will examine the processes by which the streams breach these snow dams as well as the factors that determine the rate and nature of channel formation in the snow-filled valleys.

A) **The Nature and Origin of Massive Ground Ice on Fosheim Peninsula** **Project:** 165-87

B) **Perennial Springs and Frost Blisters at Expedition Fiord, Axel Heiberg Island**

Period: 15 June - 30 July

Area: Slidre River, Expedition Fiord, Eureka

Name: Pollard, Wayne

Department of Geography
McGill University
805 Sherbrooke Street West
Montreal, Quebec
H3A 2K6

Tel: (514) 398-4454
Fax: (514) 398-7437

This project is concerned with the investigation of massive ground ice in the Canadian High Arctic. Current research focuses upon ice occurring on the Fosheim Peninsula, Ellesmere Island and the Mokka Fiord area, Axel Heiberg Island. Detailed cryostratigraphic investigation of natural exposures, shallow coring and Ground Probing Radar surveys provide the basis for a better understanding of ice distribution and nature. Geochemical, isotopic and petrographic analyses provide the basis of interpretation of ice origin.

ICE PHYSICS

Determination of Three-Dimensional Structure and Temperal Variability of Elastic Wave Speeds in Arctic Sea Ice

Project: 202-92

Period: 1 March - 15 April

Area: Sabine Bay, Melville Island

Name: Rajan, S.D., Dr.

Woods Hole Oceanographic Institution
Bigelow G3, Water Street
Woods Hole, Massachusetts
02543 USA

Tel: (508) 548-1400 Ext. 2317
Fax: (508) 457-2194

To study the morphology of sea ice using the technique of crosshole tomography. Specifically, the interest is in the spatial structure of the elastic wave speed and its seasonal variations.

Seismic and Acoustic Remote Sensing of Sea Ice

Project: 111-92

Period: 1-12 April

Area: Barrow Strait

Name: Farmer, David M.

Institute of Ocean Sciences
Department of Fisheries and Oceans
P.O. Box 6000
9860 West Saanich Road
Sidney, British Columbia
V8L 4B2

Tel: (604) 363-6591
Fax: (604) 363-6798

Using acoustic and seismic sensors (hydrophones and geophones) to monitor ice fracturing activity. Based on observations developing theoretical and numerical models, to relate fracturing sounds to ice mechanical and thermal properties so that ice response to environmental forcing can be inferred.

Pressure Ridge Ice Scour Experiment (PRISE) **Project:** 258-91

Period: 1 April - 10 May

Area: Tuktoyaktuk

Name: Dyke, Monty

Centre for Cold Ocean
Resources Engineering
Memorial University
St. John's, Newfoundland
A1B 3X5

Tel: (709) 737-8354
Fax: (709) 737-4706

The Pressure Ridge Ice Scour Experiment is directed at resolving pipeline loads through empirical measurement and modelling of soil stresses and deformations caused by scouring ice keels. The Extreme Gouge Depth Program is directed at resolving the ages of scours/gouges to determine the recurrence rate of extreme events.

Glacier Research in the Queen Elizabeth Islands **Project:** 10-73

Period: 10 April - 12 May

Area: Meighen, Melville, Devon Islands and Agassiz Ice Cap

Name: Koerner, Roy, Dr.

Geological Survey of Canada
Energy, Mines and Resources
601 Booth Street
Ottawa, Ontario
K1A 0E8

Tel: (613) 996-7623
Fax: (613) 996-9990

To measure mass balance on Meighen, Melville, Devon and Northern Ellesmere ice caps for climate monitoring; to test new GSC electro-mechanical drill on Agassiz Ice Cap and collect samples for paleoclimate studies; to collect snow samples for pollen analysis for environmental monitoring; to introduce two St. Petersburg Arctic and Antarctic Institute scientists to Canadian field glaciology; and to collect snow samples for Atmospheric Environment Service, Dalhousie University and the University of Stockholm.

Field Validation of Arctic SAR Imagery **Project:** 149-92

Period: 1-15 May

Area: Resolute Bay Area, Dundas Island, Muskox Fiord, Prescott Island

Name: Fequet, D.

Ice Centre
Atmospheric Environment Service
Environment Canada
373 Sussex Drive
LaSalle Academy, Block E
Ottawa, Ontario
K1A 0H3

Tel: (613) 996-5089
Fax: (613) 563-8480

The project's objective is to conduct a validation of sea ice types and surface features for selected sites covered by Atmospheric Environment Service - SAR imagery. The imagery is collected during the annual winter Arctic round robins.

LIMNOLOGY

Trace Organic Contaminants in the Arctic Aquatic System **Project:** 6-86

Period: 1 March - 14 July

Area: Mould Bay, Eureka, Agassiz Ice Cap, Amituk Lake

Name: Gregor, D.J., Dr.

National Water Research Institute
Environment Canada
P. O. Box 5050
867 Lakeshore Road
Burlington, Ontario
L7R 4A6

Tel: (416) 336-4611
Fax: (416) 336-6430

A number of activities will be undertaken to further the knowledge of trace organic contaminants in the Arctic. These will include continued snowpack sampling of eight High Arctic sites, continued reconnaissance of Agassiz Ice Cap, servicing and sample collection from two snow collectors operated throughout the winter at Eureka and Mould Bay, establishment of an intensive study basin on east Cornwallis Island and preparation of samples at Resolute.

Paleoclimatic Studies of Lake Sediments from the High Arctic **Project:** 136-88

Period: 1 May - 12 August

Area: Taconite Inlet, Northern Ellesmere Island

Name: Bradley, Raymond S., Dr.

Department of Geology
and Geography
Morrill Science Center
University of Massachusetts
Amherst, Massachusetts
01003 USA

Tel: (413) 545-2794
Fax: (413) 545-1200

Meteorological, hydrological, limnological and sedimentological studies are being carried out in two coastal lake basins on northern Ellesmere Island. The lakes contain laminated sediments which may contain a year-by-year record of climatic variations over the last few hundred to a few thousand years. The objective of the study is to understand the relationship between climate, runoff, sediment flux and contemporary limnological processes today, so as to have a better basis for understanding the sedimentary record of the past.

Mass Balance of White and Baby Glaciers and Lake Ice Investigations **Project:** 123-83

Period: 15-29 May

Area: Colour Lake, Expedition Fiord, Axel Heiberg Island

Name: Adams, Peter W.

Department of Geography
Trent University
P.O. Box 4800
Peterborough, Ontario
K9J 7B8

Tel: (705) 748-1440
Fax: (705) 748-1246

To study processes of accumulation and ablation on the mass balance of Baby and White glaciers; to study the role of ice cover on the hydrology and chemistry of Colour Lake, and to recover climate data from an automatic station near the lake. Preliminary measurements of sulfur springs output will be conducted.

Paleoenvironmental Change, Truelove Lowland, Devon Island **Project:** 180-85

Period: 15 May - 14 August

Area: Truelove Lowland

Name: King, Roger H.

Department of Geography
University of Western Ontario
London, Ontario
N6A 5C2

Tel: (519) 679-2111 Ext. 5006
Fax: (519) 661-3868

The research will focus on reconstructing the paleoenvironmental record preserved in the sediments of a series of shallow lakes in Truelove Lowland, Devon Island. Proxy environmental data from these sediments will be developed and used to establish a longterm, high resolution record of paleoenvironmental change over the last 40,000 years.

Limnology and Paleoecology of Arctic Lakes **Project:** 204-92

Period: 4-28 July

Area: Alert, Ellesmere Island and Resolute

Name: Smol, John P., Dr.

Department of Biology
Queen's University
Kingston, Ontario
K7L 3N6

Tel: (613) 545-6147
Fax: (613) 545-6617

The limnological and paleolimnological studies are focused on describing and correlating with limnological variables the algae and aquatic invertebrates of arctic lakes. Fossil assemblages of these lakes are then used, focussing on problems related to climatic change.

Genetic Diversity in the Biota of Arctic Lakes **Project:** 81-88

Period: 5-30 August

Area: Igloolik Area

Name: Hebert, Paul D.N.

Department of Biology
University of Guelph
Guelph, Ontario
K1G 2W1

Tel: (519) 824-4120 Ext. 3598
Fax: (519) 767-1656

This research program involves the survey of patterns and levels of molecular and biochemical genetics variation in populations of arctic fish and zooplankton. The work aims to extend understanding of taxon diversity in arctic aquatic habitats and to reconstruct postglacial routes of dispersal from glacial refugia.

MULTIDISCIPLINARY

Year-Round Oceanographic and Climatic Monitoring **Project:** 259-92

Period: 1 January - 31 December

Area: Pond Inlet, Borden Station, Nunguvik (Navy Board Inlet)

Name: Steltner, Hermann A.

Arctic Research Establishment
Pond Inlet, Northwest Territories
X0A 0S0

Tel: (416) 934-3302 and
(819) 899-8823
Fax: (416) 934-3911 and
(819) 899-8823

Year-round oceanographic and climatic monitoring and support of a variety of field studies.

A Seasonal Sea Ice Monitoring and Modelling Site (SIMMS '92) **Project:** 128-90

Period: 10 April - 20 June

Area: Resolute Passage

Name: Barber, David G., Dr.

Earth-Observations Laboratory
Department of Geography
University of Waterloo
Waterloo, Ontario
N2L 3G1

Tel: (519) 885-1211 Ext. 2689
Fax: (519) 888-6768

SIMMS is a five-year multidisciplinary research program designed to develop analysis methodologies by which visible and micro-wavelength remote sensing data may be used to monitor changes in ocean-ice-atmosphere processes. Observational and modelling programs are conducted coincidentally during the seasonal transition from winter to summer.

Algal Physiology and Sea Ice Optics **Project:** 79-90

Period: 17 April - 30 May

Area: Resolute Passage

Name: Cota, Glenn F., Dr.

Department of Ecology
University of Tennessee
Knoxville, Tennessee
37996-1610 USA

Tel: (615) 974-3065
Fax: (615) 974-3067

Biogenic bromine production by various algae will be further examined in relation to photosynthetic metabolism. Organohalogen distributions and fluxes will be determined in conjunction with ozone depletion. Measurements of incident, reflected and transmitted irradiance with and without snow and/or ice algae will be used to determine in situ transmission spectra.

High Arctic Global Change Observatory Program **Project:** 63-84

Period: 5 May - 31 August

Area: West-central Fosheim Peninsula

Name: Edlund, Sylvia A., Dr.

Geological Survey of Canada
Energy, Mines and Resources
601 Booth Street
Ottawa, Ontario
K1A 0E8

Tel: (613) 995-4882
Fax: (613) 996-9990

This multidisciplinary program seeks to understand the links between climate change and terrain responses in this extremely sensitive area of the High Arctic. The program includes monitoring of current climatic variability and the responses of geomorphic processes, biota, particularly vegetation and soil hydrology, and paleoenvironmental reconstruction to understand past climate change. Through these understandings, we hope to predict better the impact of future climatic change.

Paleoenvironmental Change in the Canadian High Arctic **Project:** 38-75

Period: 25 June - 21 August

Area: Hazen Plateau, Judge Daly Promontory, Cañon Fiord

Name: England, J., Dr.

Department of Geography
University of Alberta
3-32 HM Tory Building
Edmonton, Alberta
T6G 2H4

Tel: (403) 492-5673
Fax: (403) 492-7598

For 15 years, past glacial activity and sea level fluctuations in the northern Queen Elizabeth landscape have been investigated, including its marine channels and fiords, since the late Tertiary. The research is interdisciplinary and focusses on the nature of paleaoenvironmental change in high latitudes.

Bylot Interuniversity Group for Interpreting Cold Environments (BIGICE) **Project:** 293-91

Period: 13 July - 10 August

Area: Bylot Island

Name: Shilts, William, Dr.

Geological Survey of Canada
Energy, Mines and Resources
601 Booth Street
Ottawa, Ontario
K1A 0E8

Tel: (613) 995-4523
Fax: (613) 992-2468

To carry out investigations of various glacial and periglacial phenomena on southeastern Bylot and northeastern Baffin Islands from four small field camps. Objectives of this and succeeding summer's work are 1) to better understand the glacial and periglacial history and processes in this environmentally sensitive region, particularly as they relate to recent (post 1958), possibly climatically driven, retreat of long-stable ice masses; 2) to analyze glacier sections and cores to define the nature of atmospheric deposition of metals; 3) to use the area as a model with which to understand glacial and periglacial processes in areas formerly covered by the Laurentide Ice Sheet; and 4) to provide educational and thesis opportunities for young earth science students interested in Arctic research.

Ice Scour Disturbance and Structure of Arctic Bottom Communities

Project: 240-91

Period: 25 July - 15 August

Area: Resolute Bay, Northwest Territories

Name: Conlan, Kathleen E., Dr.

Canadian Museum of Nature
P.O. Box 3443, Station D
Ottawa, Ontario
K1P 6P4

Tel: (613) 954-7677
Fax: (613) 954-6439

This is a three-year Canadian/U.S. project to determine the ecological impact of ice scour on Arctic benthic communities and the flow of energy in the benthic boundary layer. Three components will be studied: a) physical disturbance to the sea floor, b) benthic population and community responses to ice scour, and c) changes in benthic metabolism and nutrient flux. Quantitative models of physical disturbance and biotic response will be developed and the generality of these models to the Arctic ecosystem will be tested in a number Arctic locations.

OCEANOGRAPHY

Environmental Site Assessments and Monitoring **Project:** 216-92

Period: 1 April - 30 May

Area: Rae Point, Kittigazuit Channel

Name: d'Entremont, André

Environmental Protection
Environment Canada
P.O. Box 370
Yellowknife, Northwest Territories
X1A 2L9

Tel: (403) 920-6062
Fax: (403) 873-8185

There are two components to the study, one a site assessment of Panarctic's scrap metal stockpiles at Rae Point and three other sites to assess disposal options, particularly if disposal at sea would be suitable. The second would be a short monitoring program and inspection at Kittigazuit Channel near Tuktoyaktuk. Samples for the analysis of suspended sediments and heavy metals may be collected.

The Biological CO_2 Pump Under First-Year Ice of the Arctic Ocean **Project:** 267-92

Period: 7 April - 10 June

Area: Resolute Passage

Name: Legendre, Louis

Department of Biology
Université Laval
Quebec, Quebec
G1K 7P4

Tel: (418) 656-5788
Fax: (418) 656-2339

The Arctic Ocean is sensitive to global climate change, and global warming is predicted to diminish the area of sea ice. This collaborative project, involving Japanese and Canadian scientists from universities and government laboratories, will characterize the biological communities and processes of waters covered by annual sea ice in the Canadian Arctic and the Sea of Okhotsk. The "biological CO_2 pump", the set of biological mechanisms by which CO_2 is transported to the ocean sediments, will be the principle focus of the work. By comparing systems at very different latitudes with their physical driving mechanisms, it will be possible to improve climate models and to better forecast impacts of climate change in polar regions.

A Study of Volatile Brominated Halocarbons in Seawater

Project: 207-92

Period: 9 April - 15 May

Area: Resolute Passage

Name: Moore, Robert M., Dr.

Temporary address until April '92:
School of Environmental Sciences
University of East Anglia, Norwich
United Kingdom NR4 7TJ

Department of Oceanography
Dalhousie University
Halifax, Nova Scotia
B3H 4J1

Tel: (44) 603-56161 Ext. 2543
Fax: (44) 603-507719

This work is part of an NSERC-funded project to study the ocean supply of organic forms of bromine to the Arctic atmosphere. A spectrum of halogenated methane will be measured in vertical profiles through the water column and in air and snow. Data from this site will complement studies which have been made in the Beaufort Sea, Baffin Bay, the Labrador Sea, and northwest Atlantic.

Glacimarine and Glacilacustrine Record of Quaternary Environments

Project: 31-90

Period: 10 June - 30 August

Area: Resolute, Cañon Fiord, Hot Weather Creek and Romulus Lake

Name: Gilbert, Robert, Dr.

Department of Geography
Queen's University
Kingston, Ontario
K7L 3N6

Tel: (613) 545-6030
Fax: (613) 545-6122

The sedimentary record and modern processes of Cañon Fiord and lakes on Fosheim Peninsula of Ellesmere Island are being used to interpret changes in the post-glacial environment of the region. Work involves obtaining acoustic subbottom records and cores from the fiord and lakes. Sedimentology and microfossil records are analyzed in the cores in paleoenvironmental reconstructions.

Littoral and Morpho-Sedimentary Dynamic, Canadian Beaufort Coast

Project: 297-91

Period: 10 July - 30 August

Region: Drift Point, Tuktoyaktuk Peninsula

Name: Héquette, Arnaud

Department of Geography
Université Laval
Ste-Foy, Quebec
G1K 7P4

Tel: (418) 656-2363
Fax: (418) 656-2019

The purpose of this project is to develop an evolution model of the littoral zone around the southeast coast of the Canadian Beaufort Sea taking into account: 1) geomorphic and sedimentary processes, 2) geomorphic and sedimentary dynamic variations in the foreshore and along the inner part of the continental platform, and 3) variations of relative sea level. Field work will include the measurements of coastal retreat, the sampling of littoral and sub-littoral sediments, geophysical surveys in shallow water (high resolution reflection seismic, bathymetry and sidescan sonar), the use of current meters in the littoral zone, and coring in lagoons and on the sandspits and bars of the foreshore.

Western Arctic Tidal Program 1992

Project: 28-82

Period: 13 July - 3 August

Area: Tuktoyaktuk, Cape Parry

Name: Sargent, E.D.

Canadian Hydrographic Service
Department of Fisheries and Oceans
P.O. Box 6000
9860 West Saanich Road
Sidney, British Columbia
V8L 4B2

Tel: (604) 363-6343
Fax: (604) 363-6323

To maintain and service tide gauges at Tuktoyaktuk and Cape Parry for the ongoing monitoring of water levels in the Beaufort Sea area.

Organochlorine Contaminants in Arctic Marine Food Webs

Project: 209-91

Period: 5-15 September

Area: Resolute Bay

Name: Hargrave, B. T., Dr.

Bedford Institute of Oceanography
Department of Fisheries and Oceans
P. O. Box 1006
Dartmouth, Nova Scotia
B2Y 4A2

Tel: (902) 426-3188
Fax: (902) 426-7827

Marine food-web dynamics of organocholorine contaminants studies in an oligotrophic region of the Arctic Ocean from Ice Island (1986-1990) will be extended to an area of higher biological productivity (Resolute Bay) between 1992 and 1996. An over-wintering sampling period (Sept. 1992 to August 1993) will provide the first annual measurements of these organic contaminants in the Arctic marine ecosystem.

SEA ICE

Determination of Three-Dimensional Structure and Temperal Variability of Elastic Wave Speeds in Arctic Sea Ice

Project: 202-92

Period: 1 March - 15 April

Area: Sabine Bay, Melville Island

Name: Rajan, S.D., Dr.

Woods Hole Oceanographic Institution
Bigelow G3, Water Street
Woods Hole, Massachusetts
02543 USA

Tel: (508) 548-1400 Ext. 2317
Fax: (508) 457-2194

To study the morphology of sea ice using the technique of crosshole tomography. Specifically, the interest is in the spatial structure of the elastic wave speed and its seasonal variations.

Seismic and Acoustic Remote Sensing of Sea Ice

Project: 111-92

Period: 1-12 April

Area: Barrow Strait

Name: Farmer, David M.

Institute of Ocean Sciences
Department of Fisheries and Oceans
P.O. Box 6000
9860 West Saanich Road
Sidney, British Columbia
V8L 4B2

Tel: (604) 363-6591
Fax: (604) 363-6798

Using acoustic and seismic sensors (hydrophones and geophones) to monitor ice fracturing activity. Based on observations developing theoretical and numerical models, to relate fracturing sounds to ice mechanical and thermal properties so that ice response to environmental forcing can be inferred.

Pressure Ridge Ice Scour Experiment (PRISE) **Project:** 258-91

Period: 1 April - 10 May

Area: Tuktoyaktuk

Name: Dyke, Monty

Centre for Cold Ocean
Resources Engineering
Memorial University
St. John's, Newfoundland
A1B 3X5

Tel: (709) 737-8354
Fax: (709) 737-4706

The Pressure Ridge Ice Scour Experiment is directed at resolving pipeline loads through empirical measurement and modelling of soil stresses and deformations caused by scouring ice keels. The Extreme Gouge Depth Program is directed at resolving the ages of scours/gouges to determine the recurrence rate of extreme events.

Ice Subsurface Characterization Project **Project:** 11-85

Period: 7-27 April

Area: Tuktoyaktuk

Name: Melling, Humfrey, Dr.

Department of Fisheries and Oceans
Institute of Ocean Sciences
P.O. Box 6000
Sidney, British Columbia
V8L 4B2

Tel: (604) 363-6552
Fax: (604) 363-6746

Moored subsea sonars are used to measure motions of pack ice and the upper ocean, and to detail the thickness and underside topography of drifting ice fields. The data obtained will be applied in design of offshore structures and sea bed installations, in the interpretation of spaceborne radar images of sea ice, and in studies of interannual variations in Beaufort Sea ice cover.

Field Validation of Arctic SAR Imagery **Project:** 149-92

Period: 1-15 May

Area: Resolute Bay Area, Dundas Island, Muskox Fiord, Prescott Island

Name: Fequet, D.

Ice Centre
Atmospheric Environment Service
Environment Canada
373 Sussex Drive
LaSalle Academy, Block E
Ottawa, Ontario
K1A 0H3

Tel: (613) 996-5089
Fax: (613) 563-8480

The project's objective is to conduct a validation of sea ice types and surface features for selected sites covered by Atmospheric Environment Service - SAR imagery. The imagery is collected during the annual winter Arctic round robins.

ZOOLOGY

Porcupine Caribou Management Studies **Project:** 142-87

Period: 1-15 March

Area: Inuvik, Eagle Plains

Name: Smits, Cor

Department of Renewable Resources
Yukon Government
P.O. Box 2703
Whitehorse, Yukon
Y1A 4N6

Tel: (403) 667-5087
Fax: (403) 668-4363

Information of calf survival during their first year is limited for the Porcupine Caribou herd. It is nevertheless an important variable in the understanding of the herd's population dynamics. The field work involves annual sampling of the herd to determine the percentage of short yearlings in the population.

Ringed Seal Density Estimation **Project:** 125-92

Period: 18-28 March

Area: Resolute Passage and Barrow Strait

Name: Innes, Stuart

Arctic Marine Mammal Ecology
and Assessment Research
Department of Fisheries and Oceans
501 University Crescent
Winnipeg, Manitoba
R3T 2N6

Tel: (204) 983-5057
Fax: (204) 984-2403

This study will test the assumptions of the seal-removal and line transect methods for estimating ringed seal densities. In late March, trained dogs will search for seal structures within Resolute Passage and Barrow Strait in randomly selected areas, along line transects and within plots. Seal density estimates will be calculated for both the line transect and seal-removal data for each site; these estimates will be compared to evaluate the validity of the two techniques.

Under-Ice Behaviour of Ringed Seals **Project:** 182-92

Period: 20 March - 20 June

Area: Resolute Passage Area

Name: Kelly, Brendan P.

Institute of Marine Science
University of Alaska
Fairbanks, Alaska
99775-1080 USA

Tel: (907) 474-7662
Fax: (907) 474-7204

This project is investigating the social organisation, diving behaviour, and foraging patterns of ringed seals under the shore-fast ice. Sonic transmitters are attached to the seals and monitored by way of four hydrophones lowered through the ice. Based on the time delays between signals received at each of the hydrophones, the three-dimensional locations of the seals are calculated, displayed, and stored on micro-computers.

Polar Bear Population Ecology in the High Arctic **Project:** 65-89

Period: 10 April - 15 May

Area: Cape Providence, Wynniatt Bay, Pond Inlet, Grise Fiord, Clyde River

Name: Messier, Francois, Dr.

Department of Biology
University of Saskatchewan
Saskatoon, Saskatchewan
S7N 0W0

Tel: (306) 966-4421
Fax: (306) 966-4461

Population productivity, population estimates, space-use patterns, and sustained yield assessment of polar bears are evaluated over two different sea ice conditions: land-fast sea ice (Viscount Melville Sound - M'Clure Strait area) and active sea ice (Baffin Bay area). The project will provide needed information on the ecology of discrete polar bear populations and the allocation of quotas for bear harvesting by native people compatible with international conservation policies on polar bears.

Breeding Behaviour of the Arctic Hare **Project:** 26-73

Period: 20 April - 20 May

Area: Sverdrup Pass, Polar Bear Pass

Name: Gray, David R., Dr.

Research and Collections
Canadian Museum of Nature
P.O. Box 3443, Station D
Ottawa, Ontario
K1P 6P4

Tel: (613) 954-2663
Fax: (613) 954-6439

As part of a longterm study of the behavioural adaptations of Arctic birds and mammals, a study will be completed of the breeding behaviour of Arctic hares at Sverdrup Pass, Ellesmere Island, in April/May. The shelter-seeking behaviour of hares, especially use of snow dens, will be investigated at Polar Bear Pass on Bathurst Island.

Sub-Ice Localization of Ringed Seals Using a Hydrophone Array **Project:** 236-90

Period: 25 april - 13 June

Area: Resolute Passage, Allen Bay

Name: Cleator, Holly

Freshwater Institute
Department of Fisheries and Oceans
501 University Crescent
Winnipeg, Manitoba
R3T 2N6

Tel: (204) 983-8975
Fax: (204) 984-2403

The purpose of this study is to evaluate the potential for using a hydrophone array to localize calling ringed seals under the ice and thereby estimate seal densities during the pupping and breeding season (April-June). Ringed seal calls will be recorded and localized using a four-hydrophone array and computer-based analysis system. These location fixes will be compared with tracking data obtained from tagged animals which are being monitored by other researchers working on an associated study. Playback tests will also be conducted to evaluate the accuracy of the calculated location fixes.

Marine Mammal Bioacoustics **Project:** 55-86

Period: 15 May - 10 June

Area: North of Tuktoyaktuk Along Ice Edge

Name: Cosens, Susan E.

Freshwater Institute
Department of Fisheries and Oceans
501 University Crescent
Winnipeg, Manitoba
R3T 2N6

Tel: (204) 983-8838
Fax: (204) 984-2403

To estimate propagation distance of beluga sounds and assess their vulnerability to masking by ship noise. Data will be gathered on call structure and source levels, ambient noise and vessel noise characteristics. The database is being expanded to include Beaufort Sea belugas which may behave differently than High Arctic belugas because of differences in their acoustic environments.

Responses of Beluga Whales to Vessel Noise **Project:** 235-91

Period: 15 May - 15 June

Area: Tuktoyaktuk Area

Name: Cosens, Susan E.

Freshwater Institute
Department of Fisheries and Oceans
501 University Crescent
Winnipeg, Manitoba
R3T 2N6

Tel: (204) 983-8838
Fax: (204) 984-2403

To test responses of Beaufort Sea beluga whale to playback of ship and other noise. Responses to playback of ship noise will be compared with reactions to actual ships. Over the longer term regional and seasonal differences in responses to underwater ship noise by beluga whales will be compared.

Predation, Reproductive Success and Gosling Survival in Black Brant

Project: 286-92

Period: 15 May - 15 August

Area: Anderson River Delta

Name: Armstrong, Terry

Department of Biology
University of Saskatchewan
Saskatoon, Saskatchewan
S7N 0W0

Tel: (306) 966-4412
Fax: (306) 966-4461

Predation during the nesting season is a poorly understood factor affecting reproductive success of Arctic waterfowl. Our preliminary studies indicate that avian predators play a significant role in determining survival of eggs and goslings in black Brant (Branta bernicla nigricans) on their nesting grounds. Working at the Anderson River delta, the objective is to determine the strategies and tactics used by Brant to avoid predation on juveniles and compare those tactics with those of sympatric Lesser Snow Geese (Chen cairulescens caerulescens).

Lemming Population Dynamics in the Western Arctic

Project: 117-89

Period: 20 May - 10 September

Area: Pearce, Nicholson, and Kaye Points, Anderson and Horton Rivers, North Star Harbour

Name: Krebs, Charles J., Dr.

Department of Zoology
University of British Columbia
6270 University Boulevard
Vancouver, British Columbia
V6T 1Z4

Tel: (604) 822-4595
Fax: (604) 822-2416

To investigate the hypothesis that collared lemming population growth is limited principally by predation mortality at Pearce Point, NWT. An 11-hectare predator enclosure around one population provides the critical test. Radiotelemetry is used to measure mortality rates in lemmings and to analyze predator scats and raptor pellets to measure losses to predators.

Ecology of the Reproduction of the Big White-Fronted Goose

Project: 148-88

Period: 27 May - 20 August

Region: Bylot Island

Name: Gauthier, Gilles, Dr.

Department of Biology
Université Laval
Ste-Foy, Quebec
G1K 7P4

Tel: (418) 656-5507/3180
Fax: (418) 656-2043

The short growing season in the Arctic forces geese to complete their reproduction cycle quickly to allow their young to be able to fly before the end of the summer. The purpose of this study is to evaluate the rate of survival and growth in the young during the rearing of the great white-fronted goose nesting on Bylot Island in the High Arctic, and to measure the influence of such factors as the date of hatching, feeding strategies, and the use of the habitat on growth and survival.

Studies of Breeding and Migration of Greater Snow Geese

Project: 126-80

Period: 28 May - 20 August

Area: Bylot Island

Name: Reed, Austin Dr.

Canadian Widlife Service
Environment Canada
P.O. Box 10100
1141 Route de l'Église
Ste-Foy, Quebec
G1V 4H5

Tel: (418) 649-6128
Fax: (418) 649-6475

An improved understanding of the ecology of this important species is required to ensure proper management. This study examines changes in breeding numbers and densities over time, investigates interactions between the geese and their habitats, and monitors reproductive output and other parameters related to population dynamics. Systematic surveys are conducted every five years, observations on breeding ecology are made each year, and large numbers of geese are banded in August.

Nesting Bird - Habitat Relationships on the Yukon Coastal Plain

Project: 78-91

Period: 1-30 June

Area: Yukon Coastal Plain between the Yukon/NWT Border and Firth River

Name: Hawkings, James S.

Canadian Widlife Service
Environment Canada
Box 6010, 100 Hamilton Boulevard
Whitehorse, Yukon
Y1A 5L7

Tel: (403) 668-2285
Fax: (403) 667-7962

Nesting bird populations will be determined in a series of permanent plots representing the suite of habitats available on the Yukon Coastal Plain. These habitats have been determined and mapped with satellite (Landsat Thematic Mapper) imagery in a previous project. The plots will be censused on foot several times each. The results will be used to determine the most important habitat units, and thus the most important geographic areas for the various bird species nesting on the coastal plain.

Population Ecology of White-Fronted Geese

Project: 104-82

Period: 10 June - 7 August

Area: Horton River, Cape Perry, Nicholson Peninsula, Shingle Point

Name: Hines, James E., Dr.

Canadian Wildlife Service
Environment Canada
P.O. Box 637
Yellowknife, Northwest Territories
X1A 2N5

Tel: (403) 920-8533
Fax: (403) 873-8185

Basic information on population size, distribution, abundance, mortality, and productivity are required to understand the population dynamics of the white-fronted goose, a species of importance to subsistence hunters in the western Arctic as well as recreational hunters and naturalists further south. Specific objectives of this project are to: 1) provide estimates of population size and productivity; 2) delineate habitats of importance for breeding and moulting geese; 3) determine survival/mortality rates; and, 4) determine migration routes and wintering grounds.

Hope Bay Raptor Survey **Project:** 154-89

Period: 14 June - 11 July

Area: Walker Bay

Name: Shank, Christopher

Department of Renewable Resources
Government of the NWT
P.O. Box 1320
Yellowknife, Northwest Territories
X1A 2L9

Tel: (403) 920-6190
Fax: (403) 873-0293

Productivity of birds of prey has been regularly monitored in the Hope Bay area since 1982 as part of a larger project on gyrfalcon ecology. Helicopter surveys are done in early July to document nesting success of gyrfalcons, peregrine falcons, golden eagles, ravens, and rough-legged hawks.

Abundance and Productivity of King Eiders on Western Victoria Island/McKinley Bay Sea Duck Monitoring **Project:** 116-80

Period: 20 June - 9 August

Area: Kagloryuak River Valley

Name: Dickson, Lynne, Dr.

Canadian Wildlife Service
Environment Canada
Room 210
4999 - 98 Avenue
Edmonton, Alberta
T6B 2X3

Tel: (403) 468-8924
Fax: (403) 495-2615

Project 1 - Systematic aerial surveys will be conducted on the western half of Victoria Island to determine the distribution, abundance, habitat preferences and productivity of the King Eider. The information will be used for determining harvest limits, for land-use planning, for industrial impact assessment and as a baseline for monitoring the King Eider population.

Project 2 - The objective of this study is to monitor the impact of harbour development on the birds in McKinley Bay. Five years of surveys were conducted from 1981 to 1985. As a follow-up, the surveys were repeated in 1990 and 1991 and will be done again this summer to see if use of the bay by birds has changed since the early 1980s.

Coppermine Raptor Survey **Project:** 143-87

Period: 1-4 July

Area: Coppermine

Name: Shank, Christopher

Department of Renewable Resources
Government of the NWT
P.O. Box 1320
Yellowknife, Northwest Territories
X1A 2L9

Tel: (403) 920-6190
Fax: (403) 873-0293

Productivity of birds of prey has been regularly monitored in the Coppermine area since 1983. Snowmobile surveys are done in early May to determine the number of gyrfalcons nesting. Helicopter surveys are done in early July to determine nesting success of gyrfalcons, peregrine falcons, rough-legged hawks, and golden eagles.

Wetland Mapping of the Old Crow Flats, Yukon **Project:** 271-92

Period: 1-10 July

Area: Old Crow Flats, Yukon

Name: Hawkings, James S.

Canadian Wildlife Service
Environment Canada
Box 6010, 100 Hamilton Blvd.
Whitehorse, Yukon
Y1A 5L7

Tel: (403) 668-2285
Fax: (403) 667-7962

Wetland habitats on the Old Crow Flats will be mapped using Landsat Thematic Mapper and SPOT Panchromatic satellite imagery. Previously gathered field data on the vegetation and wetlands will be augmented with field data gathered in 1992 to provide the ground-truth information for this mapping.

Beluga Telemetry **Project:** 100-83

Period: 1-15 July

Area: Along the coast within 100 km of Tuktoyaktuk

Name: Weaver, Patt

Freshwater Institute
Department of Fisheries and Oceans
501 University Crescent
Winnipeg, Manitoba
R3T 2N6

Tel: (204) 983-5280
Fax: (204) 983-2402

This study will contribute information about beluga movements, distribution and stock identification in the Beaufort Sea. The initial phase of the program will examine summer movements of tagged belugas. Longterm migratory movements will be examined in subsequent years.

Satellite Tagging of Beluga to Study Movements and Migration **Project:** 17-73

Period: 10 July - 10 August

Area: Cunningham Inlet, Elwin Bay, Creswell Bay

Name: Smith, T.G., Dr.

Pacific Biological Station
Department of Fisheries and Oceans
P.O. Box 100
Nanaimo, British Columbia
V9R 5K6

Tel: (604) 756-7000

To continue the study of the movements, diving behaviour and seasonal distribution of beluga whales using satellite tags and observational data.

Observations of Beluga Whales **Project:** 300-92

Period: 15 July - 1 August

Area: Resolute Bay, Cunningham Inlet Area

Name: Wolfe, Art

6971 - 47th Avenue SW
Seattle, Washington
98136 USA

Tel: (206) 937-5681
Fax: (206) 938-3139

To conduct aerial photography of beluga whale concentrations in Cunningham Inlet. The purpose of this project is to secure illustration photography for an article on the whale by Smithsonian Magazine, as well as a book on animal migrations, for international distribution.

Migratory Bird Habitat in the Mackenzie Delta **Project:** 22-90

Period: 15 July - 10 September

Area: Tuktoyaktuk Area

Name: Hines, James E., Dr.

Canadian Wildlife Service
Environment Canada
Box 637
Yellowknife, Northwest Territories
X1A 2N5

Tel: (403) 920-8533
Fax: (403) 873-8185

The objective of this study is to delineate critical habitats for migratory birds in the outer Mackenzie Delta enabling Canadian Wildlife Service to make specific recommendations about when and where hydrocarbon developments should take place. The study will also provide valuable information for reviewing the boundaries of the Kendall Island Migratory Bird Sanctuary.

Walrus Distribution and Migration **Project:** 77-92

Period: 1-30 August

Area: North Baffin Island

Name: Stewart, R.E.A., Dr.

Freshwater Institute
Department of Fisheries and Oceans
501 University Cresent
Winnipeg, Manitoba
R3T 2N6

Tel: (204) 983-5023
Fax: (204) 984-2403

Walrus in the north Baffin Island area will be immobilized and attached with satellite tags. Their distribution and migration in Canadian/Greenlandic waters will be monitored. Auxiliary data such as depth and duration of dives will also be collected. This will be a joint Canadian/Greenlandic project.

Genetic Diversity in the Biota of Arctic Lakes **Project:** 81-88

Period: 5-30 August

Area: Igloolik Area

Name: Hebert, Paul D.N.

Department of Biology
University of Guelph
Guelph, Ontario
K1G 2W1

Tel: (519) 824-4120 Ext. 3598
Fax: (519) 767-1656

This research program involves the survey of patterns and levels of molecular and biochemical genetics variation in populations of Arctic fish and zooplankton. The work aims to extend understanding of taxon diversity in Arctic aquatic habitats and to reconstruct postglacial routes of dispersal from glacial refugia.

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